# DENTOLOGIA:

E. J. Stewart

# DENTOLOGIA:

# A POEM

## ON THE DISEASES OF THE TEETH,

AND

THEIR PROPER REMEDIES.

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BY SOLYMAN BROWN, A. M.

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WITH NOTES,

PRACTICAL, HISTORICAL, ILLUSTRATIVE, AND EXPLANATORY,

BY

ELEAZAR PARMLY, DENTIST.

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NEW-YORK.

1840.

# PREFACE.

On receiving the following poem, as a token of friendship from the author, believing that it possessed no ordinary merit as a production of talent and intellectual research, in addition to much valuable instruction conveyed in a pleasing form, I submitted the manuscript to rigid criticism. It was carefully examined by two gentlemen of this city, who are as distinguished for their fine taste in literature, as they are celebrated as poets and authors. These gentlemen urgently recommended the publication of the poem, on the grounds of its useful tendency, as an essay on a subject of general interest, and as a production honourable to American literature.

It occurred to me that I might make selections from the various authors whose works are in my possession, and append them to the essay, in the form of notes, illustrating and confirming the general doctrine of the poem. If these notes shall afford either rational amusement or useful instruction to any of my friends and fellow citizens, my only object will have been fully attained.

Some years ago I had the honor of laying before the public my views with regard to the profession which I had embraced. Having previously enjoyed the advantage of a friendly intercourse with the most distinguished dentists in Europe, I had gathered from them such instructions as enabled me to adopt a decided course of practice, and my subsequent experience has but confirmed and established me in the opinions which I then presented to the world.

I am not aware that the attempt has ever before been made, to write in English verse, a work inculcating the doctrines of dental science, embracing the diseases of the teeth, together with the means of their prevention and cure. On a subject so unpromising, I think all will agree with me in saying, that the author has succeeded beyond all reasonable expectation, in his design of investing the sober

form of scientific truth, in the eloquent and glowing language of poetic fancy; and I cannot for a moment doubt that my professional acquaintaces, to whom I most respectfully dedicate this little volume, will be enabled to gain an adequate knowledge of the general principles and real importance of the dental art, through the lucid medium of this poem, in the most pleasing manner.

Within the last fifty years, very great improvements have been made in the various departments of our art, but that which results in the most enduring and substantial advantage to mankind, and which therefore deserves to be the most highly prized, is the very perfect manner in which the natural teeth are now preserved in a sound and healthy condition, by the skill of the well educated practitioner. The success of a few individuals in this branch of practice, has induced many to assume the name of dentist, who are utterly unqualified to perform in a proper manner the most unimportant and trifling operation upon the teeth. Hence it is that we hear every day of the painful sufferings and lasting injuries which result from the malpractice of incompetent pretenders to dental knowledge. Whole sets of teeth are daily sacrificed at the shrine of stupidity; and the evil will never be arrested, until the good sense of those who have occasion for the intervention of art, shall be more careful in selecting the person to whom they intrust organs so useful, so ornamental, so indispensable to health and comfort, as the teeth. So long as there is no statute to protect the citizen on this subject, his common sense, enlightened by experience, must be his law and his protection.

The operation of supplying artificial teeth, is one which for some years I had relinquished, in consequence of being unable to attend to it, and at the same time, to do justice to what I consider to be the more important, and, therefore, the first object of dental surgery; but having had for more than four years past, the valuable assistance of my kinsman, Mr. Jahial Parmly, whose mechanical tact and ingenuity are not surpassed, I have associated him with me, for the purpose of enabling him to devote his time exclusively to that branch. His success during the last two years demonstrates the great advantage to be derived from this division of labor, by which each department of the profession is practised by distinct individuals. It operates like a similar distribution of labor in the other arts and sciences, ensuring a greater degree of excellence in the results.

The improvements that have been made during the last few years, in the manufacture of mineral teeth, have induced me to make extensive provision for conducting this part of the business, in the hope that still farther improvement may bring this interesting branch of our art to such a state of perfection, as to render them a substitute in most cases, for human and animal teeth, which are subject to speedy decay. Knowing no person whose mechanical skill and scientific acquirements so well qualify him for such an undertaking, I requested my friend, Mr. Brown, to join me in perfecting an art so desirable, and promising so many advantages. From the rapid improvement which he has made in the manufacture and mechanical adaptation of these teeth, as well as from my long acquaintance with his personal character, I am happy in believing that he will add one to the number of those who contribute to the dignity and usefulness of the profession; the benefit, comfort, and convenience of whose labors, will be acknowledged by thousands. If those who are intending to practise as dentists, would qualify themselves in a similar way by going through with a regular course of practical instruction, with an experienced dentist, they would soon elevate a profession to its merited rank, which is now too often degraded by ignorance and presumption.

ELEAZAR PARMLY.

*No.* 11 *Park Place,*
*New-York.*
*October* 19*th*, 1833.

# INTRODUCTION.

To Eleazar Parmly, Esq.

My dear sir,—I take the liberty to transmit to you, herewith, the result of a few weeks' solitary musing. It is an essay, in verse, on your favorite science:—A short didactic poem, intended to embrace some of the more general and popular views of that valuable art, in the exercise of which you have reared the superstructure of fame and fortune on the solid basis of intrinsic merit.

If, in addition to reputation and emolument, you have been cheered in your arduous labors, by the smiles of the beautiful and the encomiums of the wise, you may pass it to the credit of that urbanity, skill and kindness, with which your surgical practice is so distinctly marked.

I am well apprized that your unparalleled success in treating disorders of the teeth, is not the result of accident. The enterprising spirit that led you to seek a knowledge of your profession, in the two most enlightened capitals of Europe, and the persevering industry, which raised you to high rank in the city of London, before establishing yourself in your native country, are the proximate causes of your distinguished prosperity.

It is now more than ten years since our personal acquaintance began, and I have been long anxious to devise some method of testifying the warmth and sincerity with which I reciprocate your sentiments of friendship. The design of reducing some of the general doctrines of dental science to a poetic form, presented itself favorably to my mind, and seemed more especially proper, after the act of favor by which you invited me to return to your family, after a temporary absence, for the purpose of receiving your instruction, and that of your accomplished associate, in the practical operations of your profession.

I have reduced this plan to practice according to the very moderate measure of my poetical abilities; and, in whatever else it may be found wanting, I trust it will bear the uncounterfeited stamp of sincerity and gratitude.

The generous liberality which has marked your deportment towards every reputable member of your profession, and more especially, the elevated charity which has led you to qualify several individuals for extensive usefulness in the practice of dental surgery, will be remembered with gratitude, long after your personal exertions in the cause of human happiness shall have ceased on earth forever.

The experience of past ages has accumulated upon the existing generation, in the mighty results which we behold in the condition of the arts and sciences at the present day. To augment this inestimable treasure of useful knowledge, as it passes into other hands, must impart exalted transports to the good man's mind.

The anguish, deformity, and tears, which result from diseases of the teeth, are among man's real evils, and form a considerable item in the catalogue of human miseries. He, therefore, who by his public instruction, or private professional practice, mitigates or removes these evils, is a public benefactor. That such has been your happiness, is felt by a large circle of acquaintances, not only in these states, but from many and remote portions of the civilized world: and that you may long live in the peaceful bosom of your family, to indulge in the consciousness of having contributed to the positive enjoyment of so many sentient beings; and to taste with a refined and protracted relish, the sweets of friendship, fame, and fortune, is the devout wish of your friend:—

SOLYMAN BROWN.

172 *Fourth-Street,*
*New-York.*
*April 20th,* 1833.

## CANTO FIRST.

### ARGUMENT.

Invocation to living beauty as seen in the human countenance.—Importance of personal charms to the female sex.—Man a natural physiognomist.—Mental and moral qualities mirrored in the features.—Original beauty of the human race.—Beauty of angelic natures when purified from the stains of mortality.—Subject of dentistry proposed.—Universal law of nature in regard to human teeth.—Importance of good dental practitioners.

## CANTO FIRST.

No goddess born in blue-eyed Juno's reign,
Or fair-haired sister of Apollo's train—
No coy and quivered Driad of the woods,
Or laughing Naiad of the dashing floods—
Do I invoke ;—ye fabled forms—retire !
Let breathing loveliness my notes inspire :—
To thee, my cherished friend ! the strains belong,
And LIVING BEAUTY animates my song.

This magic spell that mirrors every grace
Of woman's heart, in lovely woman's face ;
This speaking index of the polished mind,
In virtue pure, by virgin truth refined ;—
Is love's own banner, gracefully unfurled,
To fix affection, and enchant the world.

Without its aid, how hard were woman's lot !
To sigh neglected, and to die forgot ;
Though nature's genial fires unceasing burn,
To live unloved, and love without return !
For well we know that all of human kind,
Read in the face the features of the mind ;
The soul's bright forms forever fresh and fair,
Wit, worth, and modesty, are pictured there.

Say not—perverted taste alone descries
An intellectual light in radiant eyes ;

Nor think Lavater's favorite science vain,
That guides the choice of every rural swain,
In search of worthy love:—for well he knows,
That when the graceful meadow-lily blows,
'Tis genial spring; and when the mantling vine,
Round the gray oak its wreaths is seen to twine,
Laden with purple fruit—that summer's showers
Have nursed to life the verdure and the flowers.
So, in the features of Myrtilla's face,
The rustic Corydon has learned to trace
Each soft affection of her glowing mind;
With what delighted and to whom inclined.

You say, perchance, "Is woman then approved
For outward charms, and but for these beloved?
Shall form and feature for all faults atone,
And mere external beauty reign alone?
By reasoning man is mental worth despised,
And but for pageantry is woman prized?"
'Tis well inquired; but mark the just reply:—
As glittering stars adorn the cloudless sky,
And smiling rainbows, when the storm is done,
Announce the bursting splendors of the sun;
So beams of lambent light that sportive play
In woman's face, proclaim interior day;
And modest sweetness, with that light combined,
Bespeaks her nature gentle and refined.

Thus, too, the cherub graces that adorn
The smiling babe in childhood's sunny morn,
Reveal the pureness of that virtue given,
The charm of earth and miniature of heaven.

Nor less does manhood's firmer brow disclose
The master passion whence his action flows.

If glory, lucre, love, his heart inspire,
See in his lineaments the raging fire ;
If war impel, behold him charge the foe,
His eyes' red lightning mingling with the blow ;
In search of gold, see meanness in his air,
And Gripus' sordid wrinkles furrowed there :—
Or, fired with love, survey his altered mien ;
Fair vernal blossoms decorate the scene,
From every flower the honeyed sweet he sips,
And burning eloquence is on his lips.

In times of old, those happier golden years,
Ere man had learned to drink the orphan's tears
And widow's sighs, and count them richest wine,
What beauty decked the "human face divine!"
Then all was loveliness :—the ruling soul
Held o'er the world, unlimited control ;
The forest knew no monster ; and the grove
No voice but that of melody and love ;—
While man acknowledged virtue as his guide,
The lamb and lion slumbered at his side ;
'Twas then, nor thorn nor thistle cursed the soil,
But plenty crowned the gatherer's pleasing toil,
Nor plague nor tempest in such skies appear,
But health and sunshine circle round the year.

And who can tell, when virtue soars away
To range the fields of unexpiring day,
Where Love unveils her charms to every eye,
And Truth unrobes his manly majesty ;
Say, who can tell, how beautiful and fair,
Those angel-forms—those heavenly natures are ?

Amid the bowers of ever pure delight,
Whence heaven's unclouded sun excludes the night.

In fragrant groves arrayed in emerald green,
Where varying landscapes animate the scene,
Thou, sainted Mother ! find'st that blest repose,
Which sweet celestial innocence bestows,—
To friendship there, thy glowing heart is given ;
Thy hands, to all the charities of heaven ;
Thy voice, to melody ; thine eye, to see
The radiant bow that spans eternity !

If nature thus, instructive, deigns to trace
The soul in every feature of the face ;
If lovely virtue there displays her charm,
And guilty passions ring the loud alarm ;
Arouse, thou slumbering fair ! and learn to see
That heaven commits thy destiny to thee.
Is virtuous love thy aim ? Deserve the prize :
Or friendship ? Know that here the secret lies :—
To be—and to appear what men approve :—
Their friendship thus is won—and thus their love.
Be mine the pride in measured verse to raise
A plain but lasting monument of praise,
To that distinguished science, known of yore,
Designed departed beauty to restore—
The Dental Art, by Greece and Rome admired,
When woman to imperial thrones aspired ;—
Those mighty states were both to ruin hurled,
But lo ! their art survives to bless the world. (1)

Full well I know 'tis difficult to chime
The laws of science with the rules of rhyme ;
Plain vulgar prose, my subject seems to claim,
Did not ambition prompt the higher aim,
The nobler pride, by more laborious care,
To speak in numbers that shall please the fair.

To woman, love's first melodies were sung,
In nature's prime, when earth and time were young,
And every bard, in each succeeding year,
Has framed his lays for woman's listening ear :—
Nor let the grovelling soul that cleaves to earth
Dare to pretend to comprehend her worth ;
When pure—she's purer than the virgin snow,
On Andes' top, when summer smiles below ;
And more delight o'er life her sweetness breathes,
Than all besides that heaven to man bequeathes.

Since beauty thus bestows the kind caress,
And oft audacity secures success,
Be mine the task to join the tuneful throng,
And blend instruction with the charms of song.

When man was fashioned by the Power Supreme,
Strange and mysterious as the fact may seem,
And cause of wonder ; to his frame was given
Peculiar structure by the hand of heaven :—
Imperious laws distinctively his own,
To other animated forms unknown.

Among these laws which science learns to trace,
Through every varying tribe of human race ;
From arctic regions, clad in endless snows,
To where the tropical sirocco blows,
As well where elegant refinement smiles,
As far remote, among the ocean isles,
One common destiny awaits our kind ;—
'Tis this, that long before the infant mind
Attains maturity—and ere the sun
Has through the first septennial circle run,
The teeth, deciduous, totter and decay,
And prompt successors hurry them away. (2)

This every mother knows, though not aware,
How precious then the kind maternal care
That holds incessant watch, lest nature's course
Should meet obstruction from some counter force.
For oft the predecessors, lingering, claim
Undue connexion with the vital frame,
And, like a monarch, vindicate alone,
The questioned title to their ivory throne.
So mothers, proud of each surviving charm,
Regard their daughters' beauty with alarm,
Lest these to admiration should aspire,
Before themselves are ready to retire.

But nature's course is fixed, and man must yield,
For 'tis but madness to contest the field
With conquering fate: and holy heaven withdraws
Its smile from all who violate its laws.

Be watchful, ye—whose fond maternal arm,
Would shield defenceless infancy from harm, (3)
Mark well the hour when nature's rights demand,
The skilful practice of the dentist's hand.
But use discretion:—oft imposture wears
The same external guise that merit bears;
And bold pretenders show consummate wit,
By duping others to abandon it.

Beware of those whom science never taught
The hard but useful drudgery of thought,
For while in indolence their years have run,
They ask the wealth that industry has won:—
Can charity for such desire success?
No, let them eat the bread of idleness.

On just desert let all success attend,
And patient merit never want a friend. (4)

To thee, companion of my happiest days,
The general voice awards superior praise;
'Twas nobly won, by sacrifice of ease,
'Mid raging tempests and through stormy seas.

END OF CANTO FIRST.

## CANTO SECOND.

### ARGUMENT.

The first dentition, or the growth and progress of the milk teeth.—Operation of lancing the gums ; fatal consequences of neglect, or of inefficient remedies,—The second dentition, or the formation and arrangement of the permanent teeth —Extraction in case of interference, or mal-arrangement.—Distortion and deformity resulting from negligence.—Perfection of the material of which the teeth are composed.

## CANTO SECOND.

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The first dentition asks our earliest care,
For oft, obstructed nature, laboring there,
Demands assistance of experienced art,
And seeks from science her appointed part.(5)
Perhaps ere yet the infant tongue can tell
The seat of anguish that it knows too well,
Some struggling tooth, just bursting into day,
Obtuse and vigorous, urges on its way,
While inflammation, pain, and bitter cries,
And flooding tears, in sad succession rise.(6)

The lancet, then, alone can give relief,
And mitigate the helpless sufferer's grief;
But no unpractised hand should guide the steel
Whose polished point must carry wo or weal:—
With nicest skill the dentist's hand can touch,
And neither wound too little nor too much. (7)

Be prompt to act:—'tis dangerous to delay,
Since life awaits the issue of a day:—
Reject the gentler means:—employ the best:—
Let unobstructed nature do the rest. (8)
This rule neglected, many a smiling form,
With beauty bright, and life blood glowing warm,

Its parents' pride, a floweret in its bloom,
Descends lamented to an early tomb. (9)

Nor less the danger when the first array—
The infant teeth—alternately decay,
Or yield succession to a hardier race
With marked reluctance ; for, in either case,
Neglect will bring repentance in its train ;
In one, deformity ;—the other, pain (10)
Or fell disease ;—but timely care may still
Avoid the danger, or repair the ill. (11)
If pain ensue, and neighboring parts inflame,
Extraction is the cure ; and 'tis the same
If nature's law, obstructed in its course,
Should meet resistance from opposing force : (12)
For this resisting force howe'er remote,
Meets in the dental art its antidote ;
Pain flies its presence ; anguish wipes her tear ;
To hope's fond vision rainbow-hues appear ;
Pale, trembling beauty hushes her alarms,
And beaux, admiring, own her added charms.

Now mark the contrast in some hideous face,
Robbed by neglect, of symmetry and grace :—
Behold those organs, formed on nature's plan,
To serve important purposes to man ;
To form the sounds in which his thoughts are drest,
His wishes uttered, and his love confest ;
To fit his solid food of every name,
For healthy action on the general frame ; (13)
Behold these organs, wrested by abuse,
From wisest purpose, and from noblest use,
Deranged, displaced, distorted, set awry,
Disgusting objects of deformity ! (14)

Such mal-formations hardier man perplex,
But, with more grief, afflict the softer sex:—
For when with grace, deformity is joined,
As one base passion desolates the mind,
So one contrasted fault alone disarms
All conquering beauty of a thousand charms.

Let azure eyes with coral lips unite,
And health's vermilion blend with snowy white;
Let auburn tresses float upon the gale,
And flowery garlands all their sweets exhale;
If once the lips in parting, should display
The teeth discolored or in disarray,
The spell dissolves, and beauty in despair
Beholds her fond pretensions melt in air.

But learn the remedy:—the dentist's skill
Subjects disordered nature to his will:—
As great commanders hear without alarms,
The shouts of battle and the shock of arms,
And, when their troops, in broken ranks, incline
To wild confusion, bring them into line;
So he—the master of the dental art,
Can order, grace, and symmetry impart,
Where anarchy had else sustained alone
The undisputed title to his throne.

Such benefits this useful science lends
To earliest youth;—and yet its aid extends
To following years, assuaging mortal pain,
And oft restoring beauty's flowery reign.

The human frame, offspring of heaven's high will,
Displays throughout inimitable skill;

No part defective : none that perfect love
Could prompt unbounded wisdom to improve.
The eye, the ear, how wondrously designed
To serve as useful allies to the mind.
The heaving lungs, that drink th' aerial flood,
Imparting vigor to the vital blood ;—
The heart, that like a virtuous monarch, reigns,
And spreads delight through all its wide domains : (15)
How wondrous these !—yet see the hand divine
By equal skill displayed in every line,
In every feature of the perfect whole,
That acts in concert with the moving soul.

To this great law, that governs every part,
And rules " as perfect in a hair as heart,"
The teeth conform ; and hence it stands confest,
Their substance, form, and structure, are the best
That wisdom could devise for such a use,
And hence, defective, only from abuse. (16)

Not polished pearl from Ceylon's coral caves,
Or California's or Cumana's waves ;
From Indian hills, Golconda's lucid gem
That shines a star in Brama's diadem ;
Nor gold of Ophir, wrought by Aaron's skill,
To form the idol calf, and worshipped still,
Could act the part in nature's general plan,
Assigned these organs in the frame of man. (17)

END OF CANTO SECOND.

## CANTO THIRD.

### ARGUMENT.

Apostrophe to Luxury;—its effects on general health.—Intemperance in eating and drinking.—Use of animal food.—Effects of luxury and intemperance on the teeth.—Cleanliness; neglect of it punished by gangrene of the teeth, and other diseases.—Fate of Urilla occasioned by her carelessness.—Caries, or decay of teeth.—The tooth-ache.

## CANTO THIRD.

Oh Luxury ! the eldest born of wealth,
Thou foe to virtue, and thou bane of health ;
Insidious nursling in the lap of ease,
Whose breath is pestilence, whosesmile disease ;
May suffering man yet see thee as thou art,
A greedy vampyre, feasting on his heart! (18)

Of all the ills that ante-date the doom
Of erring mortals, and erect the tomb
So near the cradle, shortening to a span
The fleeting life of transitory man,
The worst is luxury :—Infrequent flies
The lightning's fatal bolt ; the lowering skies
Are seldom darkened by the whirlwind's wrath,
Or loud tornado's devastating path.
Beneath the ocean wave though some expire,
And others by the fierce volcano's fire ;
Though savage war can boast his thousands slain,
On tented field, or bosom of the main ;
Yet few the victims of these fates malign,
Compared, intemperate luxury ! with thine. (19)

Wherever wealth and false refinement reign,
The pampered appetites compose their train ;

Remotest climes supply the varied feast,
But wisdom never comes a welcome guest;
The gormand, folly, bids the poison pass,
And drains destruction from the circling glass. (20)
The harmless flock, to cruel slaughter led,
Crowns high the board; for this the herd has bled, (21)
For this, the gay musicians of the grove,
Suspend forever all their songs of love! (22)
Earth, air, and ocean, each its part supplies
Of sentient life, to swell the sacrifice;
As though some fiend had sketched the darkest plan
Of bloody banquet for the monster—man! (23)

Though teeming earth bestows on honest toil,
In every climate and in every soil,
Their proper fruits, by nature's law designed,
The safe and luscious diet of mankind, (24)
Yet, see the race from flowery Eden stray,
To roam the mightiest of the beasts of prey!
See sensual man still smiling with delight,
While bleeding life is quivering in his sight!

But nature, sure to vindicate her cause,
Avenges each transgression of her laws;
Beware, rash man!—for every nice offence
Shall meet, in time, a dreadful recompence;
Nor flight can save—nor necromantic art,
Nor dext'rous stratagems elude the smart:—
For, lo, in fearful shapes, a haggard band
Of fell diseases, wait at her command.

'Tis thus derangement, pain, and swift decay,
Obtain in man their desolating sway,

Corrupt his blood, infect his vital breath,
And urge him headlong to the shades of death.
No more his cheeks with flushing crimson glow;
No more he feels the sanguine current flow;
But quenched and dim his sightless eyeballs roll,
Nor meet one star that gilds the glowing pole! (25)

Amid this general wreck of health and ease,
Where every folly generates disease,
The teeth, in spite of nature's guardian care,
In all disorders of the system share,
Besides those ills peculiarly their own,
To other portions of the frame unknown.

If sloth or negligence the task forbear
Of making cleanliness a daily care;
If fresh ablution, with the morning sun,
Be quite forborne or negligently done;
In dark disguise insidious tartar comes
Incrusts the teeth and irritates the gums,
Till vile deformity usurps the seat
Where smiles should play and winning graces meet,
And foul disease pollutes the fair domain,
Where health and purity should ever reign. (26)

Behold Urilla, nature's favored child;—
Bright on her birth indulgent fortune smiled;—
Her honored grandsire, when the field was won,
By warring freeman, led by Washington,
Nobly sustained, on many a glorious day,
The fiercest fervors of the battle-fray;
Survived the strife, and saw at length unfurled
Our union-banner floating round the world;

Then found a grave, as every patriot can,
Inscribed "Defender of the rights of man."

Her sire, whose freighted ships from every shore
Returned with wealth in unexhausted store,
Was doubly rich:—his gold was less refined
Than the bright treasures of his noble mind.

And she herself is fair in form and face;—
Her glance is modesty, her motion grace,
Her smile, a moonbeam on the garden bower,
Her blush, a rainbow on the summer shower,
And she is gentler than the fearful fawn
That drinks the glittering dew-drops of the lawn.

When first I saw her eyes' celestial blue,
Her cheeks' vermilion, and the carmine hue,
That melted on her lips:—her auburn hair
That floated playful on the yielding air;
And then that neck within those graceful curls,
Molten from Cleopatra's liquid pearls.
I whispered to my heart:—we 'll fondly seek
The means, the hour, to hear the angel speak;
For sure such language from those lips must flow,
As none but pure and seraph natures know.

'Twas said—'twas done—the fit occasion came,
As if to quench betimes the kindling flame
Of love and admiration:—for she spoke,
And lo, the heavenly spell forever broke;
The fancied angel vanished into air,
And left unfortunate Urilla there:
For when her parted lips disclosed to view,
Those ruined arches, veiled in ebon hue,

Where love had thought to feast the ravished sight
On orient gems reflecting snowy light,
Hope, disappointed, silently retired,
Disgust triumphant came, and love expired!

And yet, Urilla's single fault was small:
If by so harsh a name 'tis just to call
Her slight neglect:—but 'tis with beauty's chain,
As 'tis with nature's:— sunder it in twain
At any link, and you dissolve the whole,
As death disparts the body from the soul. (27)

Let every fair one shun Urilla's fate,
And wake too action, ere it be to late;—
Let each successive day unfailing bring
The brush, the dentifrice, and, from the spring, (28)
The cleansing flood:— the labor will be small,
And blooming health will soon reward it all. (29)
Or, if her past neglect preclude relief,
By gentle means like these; assuage her grief;
The dental art can remedy the ill,
Restore her hopes, and make her lovely still. (30)

Yet, other evils may her care engage,
The offspring of an epicurean age. (31)
Destructive caries comes with secret stealth
T' avenge the violated laws of health:
Dilapidates the teeth by slow decay,
And bears them all successively away. (32)
So, silent Time, with unresisted power,
Labors at midnight in the lonely tower;
Corrodes the granite in the ivied wall,
And smiles to hear the crumbling atoms fall;—
Till all the mighty structure disappears,
A dream forgot, a tale of other years. (33)

When caries, thus, the solid tooth destroys,
That sullen enemy to mortal joys,
The tooth-ache, supervenes:—detested name,
Most justly damned to everlasting fame! (34)

They say who most have felt, and best should know
The power of this most execrable wo,
That when Pandora's box of mortal pains,
Was first unlocked among the wondering swains,
To every vice its kindred grief was sent,
And every crime received its punishment,
Except intemperance:—no *single* ill
Could heaven's irrevocable law fulfil,
The fixed resolve, th' omnipotent decree,
That each offence should meet its penalty;
Then all these mortal woes in one were joined,
And tooth-ache came, the terror of mankind! (35)

Thou haggard fiend! of hellish imps the worst,
To mercy deaf, by sorrowing man accurst; (36)
Though cheerless days made desolate by thee,
And long, long nights of sleepless agony,
Have marked thy fearful reign in days of yore,
Thy power is crushed,—thy scorpion-sting no more
Affrights the helpless, for the dental art
Commands thy gloomy terrors to depart,
Then wipes from beauty's cheek the tears that burn,
And bids her roses and her smiles return.

END OF CANTO THIRD.

## CANTO FOURTH.

### ARGUMENT.

Remedies for the various disorders of the teeth.—Filing away carious portions.—Stopping carious cavities with gold foil.—Loss of the teeth occasioning the necessity of substituting others —Of artificial teeth.—Eulogium on those who labor for the benefit of mankind.

## CANTO FOURTH.

Auspicious art! before whose magic spell,
Disease and pain shrink shuddering back to hell,
Whose touch, like that mysterious gem of old,
That changed all baser metals into gold,
Restores the faded floweret to its bloom,
And saves the victim from the threatening tomb :—
Direct my song and teach me to rehearse
In the smooth numbers of enchanting verse,
Those varied stratagems employed by thee,
To soothe the pangs of frail humanity.

In nature's vast domain, with curious eye,
Search through the earth, the ocean, and the sky ;
Ask of the beast that crops the flowery plain,
And fish that threads the billows of the main ;
Ask of the bird that journeys on the wind,
And reasoning man for nobler flights designed ;—
If any link in wide creation's chain
Of golden harmony, produces pain ;
Or, in the general frame, is found a flaw,
But from resistance to wise nature's law ?

And this resistance comes from man alone,
Who vainly thinks to shake th' Eternal's throne ;

Who spurns the good to humble virtue given,
And madly builds himself another heaven.
Folly with wisdom holds unequal strife,
In bold infraction of the laws of life.

If then the teeth, designed for various use,
Decay and ache, 'tis only from abuse ;
And lo, triumphant art can well ensure,
At least a remedy, if not a cure.

Whene'er along the ivory disks, are seen,
The filthy footsteps of the dark gangrene ;
When caries comes, with stealthy pace to throw
Corrosive ink spots on those banks of snow—
Brook no delay, ye trembling, suffering fair,
But fly for refuge to the dentist's care.
His practiced hand, obedient to his will,
Employs the slender file with nicest skill ;
Just sweeps the germin of disease away,
And stops the fearful progress of decay. (37)

Fair science, thus, with timely care combined,
Becomes the faithful friend of human kind ;
Reverses, oft man's miserable fate,
And serves his cureless ills to mitigate :
Extracts the poison from his tainted breath,
And plucks the feather from the shaft of death.

From long neglect which nothing can atone,
Should caries excavate the solid bone,
Destroy the bright enamel in its way,
And lay the nerve quite naked to the day ;
Still dental science, subject of my song,
Invents expedients to redress the wrong.

'Tis then the world's bright god, so highly prized,
That earth and heaven are daily sacrificed
Upon its altar, wrested from abuse,
Performs in nature one substantial use :—(38)
Unlike the sacrilegious part it bore
At thundering Sinai's trembling base of yore,
When Israel's blooming daughters gave their gold,
That Aaron, frail and impious priest, might mould
The idol calf—unlike its task assigned,
To bribe, and buy, and subjugate mankind;
To purchase love and friendship; and descend
A heritage where noble virtues end;
To be, with those who basely covet it,
The villain's honor, and the dunce's wit;
The shining claim that elevates the clown
To all the stupid mummery of the gown;
The lure by which the genius oft is led
To give the termagant his bridal bed;
The current bribe to hireling virtue given;
The bartered substitute for truth and heaven!

This idol god, that thus usurps the skies,
The artist now to noblest use applies;
Transmutes its form with Cæsar's head impressed,
Or in Napolean's robes imperial dressed,
To soft and yielding lamina;—with skill
The practiced dental surgeon learns to fill
Each morbid cavity, by caries made,
With pliant gold :—when thus the parts decayed
Are well supplied, corrosion, forced to yield
To conquering art the long contested field,
Resigns its victim to the smiles of peace,
And all decay and irritation cease.

Yet oft, through ignorance or negligence,
'Twere hard to say, through lack of common sense,
The fatal spoiler works his secret way,
With noiseless industry from day to day,
All undisturbed, till, lo, the work is done
That leaves to art new conquests to be won.
'Tis thus the solid teeth, from year to year,
By folly or misfortune disappear,
Announcing man's inevitable doom,
And pointing to the portal of the tomb. (39)

But mark the triumphs of victorious art,
When sighing fair ones see their hopes depart;
When speech unsyllabled offends, and when
The lisping notes of childhood come again:
When vicious chyle from undigested food,
Abates the vital vigor of the blood;
Then—ever prompt to dry misfortune's tears,
Again the artist's magic skill appears.

In climes remote, where sacred Ganges flows
From Thibet's mountains of eternal snows,
Or far beyond the golden Gambia's source,
Where Lander sought the Niger's mystic course;
The lordly elephant, in hoary pride,
Toils through successive ages to provide
The ivory tusk; the fertilizing Nile
Breeds the huge Hippopotamus, whose spoil
Supplies new treasures;—and the ocean wave
Nurtures the sea-calf in his rocky cave,
To furnish fit materials to impart
Increased importance to the favorite art.

And now, while every sister art aspires
To light her torch at more celestial fires,

The Dentist, e'en, too proud to lag behind
The bold aeronaut who rides the wind,
Or the adventurous mariner that braves,
With bellowing steam, the fury of the waves,
O'erleaps the bounds to ancient science known,
And to all past experience adds his own.
Thus, strange to tell, is daring genius led
By truth and heaven, exultingly to tread
Untrodden fields in nature's realms afar,
Beyond the milky way or polar star.

Behold the dental artist's bright array
Of magic wonders glittering to the day ;—
The white stalactite from the mountain cave ;
The branching coral from the ocean wave ;
The crystal from the rock ; the gem that shines
With decompounded light from Indian mines ;
And alabaster ; and that yellow stone
That graces jealous beauty's virgin zone ;
The brightest gifts of every varying clime,
Resplendent spoils of nature and of time ;—
And see, obedient to his ruling will,
Their forms transmuted by his plastic skill,
Till, as when Cadmus, coveting to reign,
With teeth of dragons sowed the Theban plain
A marshalled host sprang vigorous from the glade,
In blazoned arms and towering plumes arrayed ;
So spring to light, while love her flag unfurls,
A shining panoply of orient pearls. (40)

With aids like these, from nature's store supplied,
And following nature man's unerring guide,
The artist bodly ventures to restore
The dental arch, till, perfect as before,

The teeth in order greet the wondering sight,
A theme of admiration and delight!

Let servile tongues applaud the glittering state
That decks the vain, hereditary great;
The circumventive arts of dark chicane,
That mark the general game of *loss and gain;*
The statesman's tricks, in search of sordid pelf,
To prove that none are patriots but himself;
The feats of arms that strew th' embattled plain
With mangled limbs, and crimson all the main;
Be mine the task to render just applause
To those who toil in virtue's nobler cause;
Whose serious thoughts and labors are designed
To mitigate the woes of human kind;—
Whom works of usefulness and love employ,
Like Him who fills unnumbered worlds with joy. (41)

END OF CANTO FOURTH.

## CANTO FIFTH.

### ARGUMENT.

Apostrophe to health.—Sympathetic action of disease on the system —Destructive influence of disordered teeth on the lungs, digestive organs, and nervous structure.—Influence of the teeth on health and longevity, arising from their relation to the solid aliments of man.—Importance of the teeth to the arts of eloquence and vocal music.—The commander addressing his troops on the eve of battle.—The advocate at the bar of justice, pleading the cause of injured innocence.—The venerable pastor exhorting his flock to pursue the path to heaven.—The fate of Seraphina.

## CANTO FIFTH.

Come, rosy Health! thou pretty sun-burnt maid,
And laugh with Labor in the noon-day shade;
Awake with Temperance at the peep of dawn,
And brush the dews that deck the fragrant lawn.

Enchanting nymph! how often have I seen
Thy quick elastic footstep on the green,
At summer eve among the reaper train,
The favorite belle of many a rustic swain;
The village minstrel on the turf reclined,
To melting music all his soul resigned;—
The hills, the dales, the fields, and woods around
Seem wrapped in silence, listening to the sound,
Save that one hoary rock across the plain,
Returned in echo every silver strain.

Gay, blushing Health! without thy freshening glow
Protracted life were only conscious wo;
And earth's unnumbered joys would end in pain,
If thou wert banished from the fair domain.
Be thou the blithe companion of my way,
Through cheerful years, to life's remotest day;
Though babbling fame should eulogize me not,
Nor fortune gild my solitary cot.

Ye lovely fair, who deprecate the doom
Assigned by general taste to tarnished bloom,
Be wise in time—'tis folly to delay ;
Cast all your vile cosmetic drugs away ;
Exchange the shallow artifice of dress
For nature's more enchanting loveliness ;
And know that blooming health alone abides
Where chaste and temperate cleanliness resides.

As, when the sun from burning Cancer throws
His radiant fires till all the ether glows,
The spotted plague and fever's frantic train
In pop'lous cities hold their ghastly reign,
By filth engendered—by intemperance fed,
Till half the living sink among the dead,
While pale affright, with desolating brand,
Spreads consternation through the trembling land ;
So, in the breathing microcosm of man,
Each slight derangement of the general plan,
Each local malady of every name,
Disturbs throughout the sympathizing frame.

But most the teeth, for various use employed,
Disturb the system when themselves destroyed ; (42)
For when these organs yielding to decay,
In morbid exhalations waste away,
The vital air, from heaven's aerial flood,
That warms with life the circulating blood,
Bears to the heaving lungs the deadly bane,
Where all its noxious qualities remain,
While every breath the poisonous draught repeats,
And spreads disease with every pulse that beats. (43)

Nor less the nervous sympathy conveys
Each dental malady a thousand ways, (44)
For, as the witching music of the lyre,
Is heard along each vibratory wire,
What time the heaven-instructed minstrel flings
His hurried hand among the magic strings :—
So when disease invades the dental arch,
And strides in anguish on his angry march,
His burning touch, like the electric flame,
Flashes through every fibre of the frame ;
Fever ensues, with all its raging fires,
And oft the maniac sufferer expires. (45)

And yet of all the evils that accrue
From loss of teeth, though neither small nor few,
The chief is this ;—'tis nature's general plan,
That all the solid aliments of man,
Before admission to the secret shrine,
Where vital chemistry, with skill divine,
Transforms the cruder mass to milky chyme,
By nature's metamorphosis sublime,—
Should suffer comminution ;—hence we find
The dental organs formed to cut, and grind,
And masticate the food :—this rightly done,
The process of digestion, well begun,
Results in health to each dependant part,
That feels the living impulse of the heart. (46)

But when, from loss of teeth, the food must pass,
A crude, and rigid, and unbroken mass,
To the digestive organs : who can know,
What various forms of complicated wo,
May rise terrific from that single source ? (47)
For nature, once resisted in her course,

Breeds frightful things—a monstrous progeny!
Consumption, fevers, palsy, leprosy,
The hobbling gout, that chides, at every breath,
The lingering pace of all-destroying death;
And apoplexy, dragging to his doom
The half surviving victim of the tomb.

See thus the mortal life of erring man,
Reduced by vice and folly to a span;
And years of joy alloted him below,
Exchanged for fleeting months of bitter wo!

The Power Supreme, who gave all being birth,
And fashioned man the sovereign lord of earth,
Free-will and understanding both bestowed,
The likeness and the image of his God;
And gave what beast, bird, fish, could never reach,
The all-controlling attribute of speech.
Transcendant gift! that elevates our kind
To all the lofty pleasures of the mind;
To social joys;—to all the polished arts,
That spring from sympathy of kindred hearts!

This power of speech, in which are nicely wrought,
All shades of feeling, and all forms of thought;
The silver cord that binds all human kind;
The circulating medium of the mind;—
Results from organs formed with heavenly art,
To act in concert their appointed part.
With these the dentals hold the foremost place,
Since, to their loss or injury, we trace
The greater part of those imperfect sounds
With which the general speech of man abounds.

Behold the orator, in church or state,
When warm persuasion, or when cool debate
Impels the common mind to daring deeds,
While virtue triumphs, or a nation bleeds.
His vocal organs, trained with patient skill,
Perform their part, obedient to his will.
If rampant war, with all its dire alarms,
Employ his eloquence; the shock of arms,
The shouts of armies, and their dying groans,
Roll on his quivering lips in silver tones,
While murmuring crowds, impatient still to go,
Rush to the pathway leading to the foe!

If lovely innocence, when fair and young,
Fall by the vile seducer's lying tongue,
And seek redress where justice holds her throne,
The trembling wretch, unfriended and alone,
And bathed in bitter tears, invokes the laws,
And calls on heaven to vindicate her cause:—
The orator appears:—his searching glance,
A moment, eyes the culprit wretch askance,
That crushed the bleeding flower:—words follow next,
And as the foaming mountain torrent, vext
By the projecting cliff, in angry bound,
Decends in cataracts, with thundering sound,
Till all the desert wild, and savage rock,
And hoary mountain, tremble at the shock,
So does the stream of eloquence impart
A palsied shuddering to the villain's heart!
The listening crowd reply with loud acclaim,
While Emmet lives—immortal heir of fame!

On yonder hill, which freshening shades invest,
Beneath whose spreading boughs forever rest

The mouldering ashes of the son and sire,
The village church erects its modest spire.
Behold, each Sabbath morn, with measured pace,
The silent groups that seek that hallowed place,
And mark, how meek devotion worships there,
With heart uplifted in the hour of prayer.

The morning song of love is sweetly sung,
While heaven's own flame inspires each tuneful tongue;
And see—the venerable man appears,
White with the hoary frosts of threescore years;—
The good old man, whose useful hours have flown,
To sooth all others' sorrows but his own;—
Whose daily labors to mankind are given,
In charity, but all his heart to heaven.
So pure the life this virtuous man has passed,
That all his powers are perfect to the last;
No borrowed lock to grace his brow aspires;
No optic glass his vigorous eye requires;
He lacks no single tooth that nature gave,
Nor asks a staff to guide him to the grave. (48)

With voice subdued, and unobtrusive mein,
He speaks of heaven,—he paints the flowery scene,
Where angel-natures—forms of purest love,
Meet in the bowers of innocence above,
To drink at living fountains, and be fed
On fruits immortal, and the living bread,
Till gushing tears fall fast from every eye,
And faith and hope look smiling to the sky.

Yet, in that choir that sung the morning song,
One vacant seat afflicts the listening throng;
One well known voice, admired so oft before,
For sweetest melody, is heard no more.

Is Seraphina dead, whose melting strains
Had won the hearts of all the neighbouring swains ?
Or does she now forsake the house of prayer,
And spurn her venerable pastor's care ?
Unjust suspicion ! tarnish not her fame,
Nor let reproach attaint her spotless name ;
For while her mellow voice obeyed her will,
She fondly lingered our musician still ;
And though by cruel fate compelled to part,
She leaves us all the homage of her heart.
To lonly solitude she gives her hours,
In shady copse, or shadier garden-bowers :—
In silent grief, and unconsoled, she pines,
And scarce to heaven's high will her soul resigns.
For, lo, the heavenly music of her lip—
So sweet, the laboring bees might stop to sip,
Has passed away ; discordant notes succeed,
And Seraphina's bosom lives to bleed.

Ye ask the cause : — by premature decay,
Two of her dental pearls have passed away ;
The two essential to those perfect strains,
That charm the soul when heavenly music reigns.
But fly, ye swains, to Seraphina fly,
And bid her fastly flowing tears be dry ;
Haste to her cottage, where in vain she seeks
To wipe the burning deluge from her cheeks ;
And when you find her, soothe her frantic mind,
And bid her cast her sorrows to the wind ;
In secret whisper this kind truth impart ; —
There is a remedy : — the dental art
Can every varying tone with ease restore,
And give thee music sweeter than before ! —

Thus, to desponding man in life's dark way,
The angel, mercy, points the opening day ;
And through the tear that trembles in his eye,
Reveals the glories of her kindred sky. (49)

END OF CANTO FIFTH.

# APPENDIX.

## NOTES.

(1) *But lo! their art survives to bless the world.*

Hippocrates, a lineal descendant of Esculapius, the first accurate observer, and the first eminent physician of which we have any definite account, flourished in Greece, about four hundred and sixty years before the Christian era. He describes in various parts of his works, as well the functions and period of appearance of the several teeth, as their principal diseases, and the plan of treating them, both by manual operations and by dentrifices.

At the commencement of the Christian era, we find in the writings of Celsus, a celebrated physician of Rome, very explicit instructions on the subject of several important operations on the teeth; and during the recent excavation at Pompeii and Herculaneum, several dental implements have been discovered, much resembling some of those in use at the present day.

Celsus treats of scarifying the gums, of extracting, scraping, and even of stopping teeth; and fixing loosened teeth with gold wire;—indeed, this last practice is alluded to in the twelve tables of the Roman laws.

The Latin poet, Martial, makes habitual allusion to artificial teeth, as worn by the ladies of Rome in his time.

The celebrated Arabian surgeon, Albucasis, in the tenth century, enters very extensively into descriptions of dental operations, and gives drawings of a great number of instruments, used in his time for extracting, scraping, loosening, and even of filing the teeth, a practice which had been introduced more recently than any of the others.

It was not till the seventeenth century that we have authentic records of the exercise of the profession of dentistry distinctly from that of surgery. Gillies, and other practitioners in France, received the title of surgeon dentists as early as 1622.

In the year 1700, persons destined for the dental profession were compelled, in France, to submit themselves to a regular examination; and it is from this period that we must date, in modern times, the regular establishment of this art, as a distinct branch of surgical practice.

Among those who distinguished themselves as dentists during the last century, were Berdmore, Fauchard, Gerauldy, Larini, Bunon, Mouton, Leclure, Bourdet, Aitkin, De Chemant, Ray, Moore, and Talma; and it is to the undivided attention of such men as these, that we must attribute the vast additions made during that period, to our knowledge of the structure and diseases of the teeth.

Of the authors who have written on the subject during the present century, it will be sufficient to mention here, Blake, Fox, Duval, Le Forgue, De la Barre, Beaume, Maury, Bell, Koecker, Fitch, and Hare.

There are many others whose experience would enable them to produce works highly useful to the world, and particularly to young practitioners.

Mr. Cartwright, of London, with whom I have the pleasure of a personal acquaintance, is known to be the most celebrated dentist now in Europe, but has not as yet made public his views, in relation to his practice. It is most earnestly to be hoped that he will shortly publish his opinions.

Mr. John Waite, who, for many years, not only had the most extensive practice, but was the best practitioner in London, died without leaving any thing behind him in the way of writing.

We have cause also to regret that the late Dr. Hudson, of Philadelphia, did not, during his life time, embody his professional principles for the benefit of his contemporaries, and those who shall succeed him in dental operations. I may say, without fear of contradiction, that he has left behind him no one in this country so able to instruct, and so well qualified, from observation and experience, to be useful to the student. I am well pleased to learn that he left a large collection of notes and memoranda on his practice, and critical remarks on the writings and practice of other dentists, all of which have fallen into the hands of Doctor Trenor, of this city, to whom the profession is already indebted for several very valuable papers on subjects connected with his profession. With so valuable help as the papers of Doctor Hudson, so able and zealous a compiler as Doctor Trenor may well encourage the profession to expect a work of great value to all who wish to become thoroughly acquainted with the theory and practice of dental surgery. I cannot forbear making an extract from an article published in one of the Philadelphia papers, from the pen of my highly esteemed friend, Doctor Fitch, author of the most comprehensive work on the teeth ever published in this country. The extract which follows, is a just tribute of respect to the memory of departed worth, and alike creditable to the feelings and liberality of the author; and I believe every dentist who had the slightest acquaintance with Dr. Hudson's practice, will cheerfully admit the propriety of Doctor Fitch's eulogium.

"Some abler pen—some nearer friend, may tell his merits as a parent, a husband, and a citizen. The writer of this will presume only to speak of him as a professional man. Those only who have

carefully attended to the subject, can have any adequate idea of the benefit the labors of Doctor Hudson have conferred, not only upon the people of this city, but of every part of the United States.

"When he commenced his practice here, he found the profession, generally, at a very low ebb, usually exercised by mechanics. Those great principles which elevate dental surgery from an art to a science, were almost entirely overlooked or unknown. To remove this mass of rubbish—to obliterate bitter and widely extended prejudices, was the task of Doctor Hudson. How well he performed this duty can only be estimated by a reference to the state of the profession at the time he commenced his practice, and when he was taken from it by the hand of death.

"Previously to his time, nearly all the talent among the dentists of this country was directed to the making and insertion of artificial teeth. Doctor Hudson taught the *possibility* and the immense advantage of *preserving* the *living teeth*, instead of suffering their loss, and resorting to artificial ones. He taught that, by strictly attending to the dentition of children, all the irregularities and deformity of the teeth might be prevented; and that by continuing our attentions, and performing timely operations upon any of those which might become defective, these useful organs may be preserved in perfection during our whole lives.

"Founded upon these principles, and recommended by his admirable operations, the practice of Doctor Hudson soon became the praise and admiration of all who witnessed or experienced its beneficial effects. His name was soon placed as first amongst all those who practised dentistry in this country. This reputation he always retained.

"In another way his superior system of practice has conferred an amount of benefit which can never be fully appreciated. It is, that his excellent and highly finished operations have long been models of imitation to other dentists. For a great many years, to equal his operations has been the highest ambition of other practitioners; none expected to excel them.

"The gentlemanly deportment of Doctor Hudson to his patients and patrons, his urbanity, his mildness, pointed him out as a model to all surgeon dentists.

"Finally: he ever sustained the dignity and respectability of the profession, inspired confidence in its capabilities, and demonstrated its claims to a high standing among those professions which contribute to the well being and happiness of the human family."

I have lately been informed that Doctor Flagg, of Boston, a gentleman well known for his professional ability, is now preparing a work of considerable extent, designed for the student and profession at large. Mr. Arnold, also, of this city, a well educated dentist, is translating a popular French work.

(2) *The teeth, deciduous, totter and decay.*

The teeth are composed of two very distinct substances. The internal is called the osseous part, or rather ivory, and forms the greatest part of a tooth; the external, which envelopes the former like a thin incrustation, on all that part which is out of the sockets from the commencement of the roots, is the enamel.

"At the extremity of each root there is a very small hole, by which the blood vessels and a nervous filament penetrate, destined to give it life and nourishment. The nerve and the blood vessels continue their course in a narrow canal, with which the root is provided, and form, in the interior of the tooth, a pulpy mass, composed of a gelatinous substance, contained in a very thin mucous membrane, formed by the development of the nerve and its vessels. It is by means of this membrane, that the tooth forms and nourishes itself, and acquires its increase." (*Gerbeaux, on the Teeth, Edinburgh Edition*, 1817, pp. 34, 35, 36.)

(3) *Would shield defenceless infancy from harm.*

"The teeth furnish very considerable characteristics of scrofulous habits. Either they are badly formed as to their common outline; their surfaces are corrugated and discolored; or, if they be well shapen individually, their enamel is very thin, and preternaturally white; and the spaces between the teeth are unusually wide. It is a wise precaution to observe the teeth of nurses; for I should always question the fitness of a wet nurse, with a bad set of teeth, however other circumstances may be in her favor." (*View of the Alimentary Organs, by Thomas Hare, London*, 1821, p. 228.)

(4) *And patient merit never want a friend.*

"It is to be hoped, that in time, patients will be able to discover that educated men are successful in a far greater number of instances than even the most fortunate of advertising empirics. But it is an old complaint, and, unhappily, though old, not an obsolete one, that ignorant pretension, especially when wrapped in mystery, is more attractive to the million, than modest ability. It is consoling however, to the respectable practitioner to know, that while empirical trickery may confer an evanescent fame, sound scientific acquirement is the only basis on which can be founded a reputation solid, progressive, and enduring." (*Snell on the Teeth*, 1832, p. 164.

(5) *And seeks from science her appointed part.*

"Infants have been born with one or more teeth; this was the case with the great monarch, Louis XIV., in whom the presence of a tooth at his birth, seemed the presage of his future greatness;—Polydore Virgil also mentions a child that was born with six teeth; but towards the end of the first year is the most usual time for the teeth to appear, and about the thirtieth month they are all cut, to the number of twenty: they are called milk teeth, either because they cut while milk is the only nourishment, or because they equal that fluid in whiteness. They are also called primitive or casting teeth: they are ten in number in each jaw; four of which are incisors, two canine, and four grinders. The incisors of the lower jaw appear first, then those of the upper jaw, afterward the canine, or, more frequently, the grinders.

"Every thing here appears to be for the advantage of the infant; an interval of a month or six weeks, between the cutting of each tooth, seems designed to calm the irritation which generally accompanies this evolution; for it is rare to cut these teeth, and particularly the canine, without a swelling in the gums, heat of the mouth, salivation, and redness of the cheeks. This is the way that dentition usually proceeds; sometimes it is so calm and easy, that the tenderest mother has no reason to fear, while at other times it is so laborious, and attended with so many accidents, as to put the life of the child in jeopardy; in this latter case, whatever be the cause, the effects are sufficiently obvious; they have been observed from the earliest times, and almost in every country, and accord with the observation of Hippocrates: 'Those,' says he, 'whose teeth are on the point of cutting, are affected with itching of the gums, fevers, convulsions, diarrhœas; especially in cutting the canine teeth, and in those children which are fat, and of a constipated habit of body.'—(*Aphor. sec.* III. 25.) To add to this picture, would be to augment that dread of dentition which sensible mothers feel but too acutely at present; without being able to foresee or to combat those causes, which often render it violent, and sometimes mortal. But to dissemble, and to say that dentition is never difficult and perilous, would be to consign too many mothers to a perfidious security, and one day they would have but too much reason to complain of this silence." (*Dentiste de la jeunesse, by Duval, Atkinson's translation*, pp. 29, 30, 31.)

(6) *And flooding tears, in sad succession rise.*

The first set of teeth begin to protrude generally about the sixth or eighth month; but in some cases the teeth have been known to make their appearance as early as the fourth or fifth month; and

sometimes, on the contrary, not until the fourteenth or fifteenth. The period of teething does not depend on the health and strength of the child, as this process sometimes seems slowest with the strongest children.

The two incisors of the under jaw are the first which make their appearance; and are followed, in about three weeks or a month, by similar teeth in the upper jaw. The lateral incisors of the under jaw are the next which follow. Nature then interrupts this uniformity of progress, and instead of the canine teeth, which are the next in situation, the anterior molares of the under jaw make their appearance, and are succeeded in a short time by those of the upper. The canine teeth and larger molares then follow to complete the set, which is generally effected in about two years and a half. Deviations from this order are occasionally met with, and, in some instances, children have been known to be born with the two front incisors of the lower jaw; but as such premature growth cannot be perfect, and as such teeth occasion much pain and inconvenience to the child, it is always advisable to extract them. The first dentition is a critical period in the life of a child; and the mortality from this cause is clearly ascertained to comprise more than half of those that die under the age of two years. The efforts which the teeth make to unfold themselves, naturally produce a powerful tension and pressure on the gums; and this gives rise to irritation and pain. The gums become swelled and inflamed; the saliva is constantly discharged from the mouth, and the whole frame seems to labor under the influence of fever.

It is proper, therefore, that every parent should be aware of the consequences that may ensue, in order to resort to those means which experience has found to be most successful in affording relief. This can be obtained only by lessening the pressure of the tooth on the gum. To accomplish this, the child is generally allowed some hard substance to rub thereon; but this, although it may give temporary relief, tends in the end to increase the irritation. Gentle friction with the finger will be found to afford more relief, and may be rendered still more effectual by the use of a little fine salt, or any other substance which will cause a discharge, and therefore reduce the inflammatory action of the vessels. Scarification, however, seems to be the safest experiment that can be employed. This is performed by the point of a lancet, pressed down upon the tooth, until the gum and the investing membrane be fully divided. The pressure being by this means taken off, the child will experience instantaneous relief. Parents should be cautious how they give way to any vulgar prejudice against an operation by which many have been freed from the most dangerous symptoms.

The use of the coral has been recommended by persons totally ignorant of the disorders of dentition, in opposition to the opinions of those who have made the teeth their exclusive study. I am decidedly

in favor of the theory of Doctor Blake, who says "The coral is a most dangerous weapon, put into the hands of children to destroy themselves; for as the teeth arise and become slightly elevated above the edge of the socket, those hard bodies press and bruise the gum between them and the sharp points or edge of the tooth underneath; inflammation and its consequences undoubtedly follow; and in this way, I am firmly persuaded, the lives of thousands of children have been lost."

Dentition is often accompanied by a fever of an inflammatory nature; the cheeks become flushed; the eyes heavy and the skin hot and parched; the rest is broken and the appetite lost; and if timely assistance be not obtained, convulsions sometimes suddenly supervene, and not unfrequently terminate fatally.

The mildest effort which marks the interposition of nature, is the appearance of numerous eruptions of the skin; the period of dentition marks their true nature, they are never removed nor cured until the cause ceases to exist.

(7) *And neither wound too little nor too much.*

"As far as my experience has taught me," says Dr. John Hunter, "to cut the gum down to the tooth, appears to be the only method of cure. It acts either by taking off the tension upon the gum, arising from the growth of the tooth, or by preventing the ulceration which must otherwise take place. It often happens that the gum will re-unite over the tooth; in which case the same symptoms will be produced, and they must be removed by the same method. I have performed the operation above ten times upon the same teeth, when the disease had recurred so often, and every time with the absolute removal of the symptoms. The gums may bleed a little, which may be of service in taking off the inflammation. I never saw a case where the bleeding either proved inconvenient or dangerous."—(*Hunter on the Human Teeth*, pp. 240, 243.)

(8) *Let unobstructed nature do the rest.*

"If we consult the tables of mortality in the towns and villages, the number of the victims of dentition, will certainly appear appalling; and they are always found to be more numerous in the former than in the latter. Happy villages! Your industrious inhabitants, with usages as ancient as their manners, raise their little ones in a manner more conformable to nature; they do not offer, in their cares, the spectacle of that refinement, which the mothers of the city, with more appearance of sensibility, have drawn from the theories of education, which do not acknowledge experience for their base." (*Atkinson's Duval*, p. 36.)

(9) *Descends lamented to an early tomb.*

Since in childhood the first sufferings begin, in childhood also the foundation of a good or bad constitution is laid. It is at this critical time that the greatest attention should be paid to the state of the gums, to mark the protrusion of the teeth, as well as the after changes; for it is only by knowing the steps and order of their progress, that proper aid can be given to the efforts of nature, during the years of childhood." *L. S. Parmly's Lectures*, pp. 34, 35.)

(10) *In one, deformity;—the other, pain.*

This deformity generally arises from inattention during the time of shedding teeth. The remedy consists in removing the causes, of which there are many. The first is when the growth of the jaw is insufficient for the new set, and thus forcing them to crowd and overlap each other, by which the central incisors of the upper jaw are pressed forward, and thus forming what has been termed, from its shape, "a rabbit mouth." In such cases, the extraction of one or more of the bicuspides from each side of the mouth is absolutely necessary, in order to bring the incisors into a regular arrangement, which, after this operation, is easily effected, by the occasional pressure of the thumb and finger, or by a judicious application of silken ligatures.

It is sometimes, however, necessary to apply gold plates, springs, and other mechanical contrivances, to bring them into a regular arrangement.

A second irregularity arises from supernumerary teeth. This takes place, most frequently, in the front teeth of the upper jaw, and thus gives it a most unseemly appearance. In this case it is likewise necessary to have recourse to extraction as soon as possible.

A third irregularity, and one of frequent occurrence, arises from one tooth projecting beyond another. This is easily remedied by removing the projecting part with a proper instrument.

A fourth irregularity consists in the teeth having formed themselves into ragged edges: and a fifth, in their having received fractures from blows or falls. The last two irregularities are principally confined to the front teeth, from their frequent action against each other, more especially when the back ones have been lost; and from being, by their situation, more exposed to accident. These irregularities are likewise remedied by removing portions from their cutting edges. This operation is not only one of the most useful, but it is often absolutely necessary; for diseases of the tongue and cheek are sometimes occasioned by projecting, or badly formed teeth: and it not unfrequently happens, that very useful teeth are extracted, to the

future inconvenience of the patient, when the judicious removal of portions only would have answered every purpose; and that a partial loss of enamel from the cutting edges never produces decay, while the natural cavity in the tooth remains untouched, is evident from the well known practice of savage nations, who cut their teeth into various shapes without incurring any disease. When fractures are too extensive to be remedied by the above treatment, various circumstances, particularly the age of the person, must influence the mode of proceeding. If the fracture be of one tooth, and the person has not arrived at the age of maturity, the extraction of the fractured tooth, by giving the adjoining ones the opportunity of approaching each other, will render the defect but inconsiderable. When, however, such accidents occur at an advanced period of life, this kind of treatment can hardly be expected to be entirely successful; but as there is no other means of remedying the defect, unless it be the insertion of an artificial tooth, the earlier assistance is procured, the greater will be the chance of success. A tooth that has been knocked out without injury to its socket, will fasten again, if immediately returned and secured in its place.

Mr. Duval has the following judicious remark on this subject:— "It is from the age of six years to that of fourteen, being the usual period of the second dentition, that the teeth require the greatest care. When there is any disposition to irregularity, they ought to be inspected once or twice a year by the surgeon dentist, who can in almost all cases ensure a regular arrangement." (page 27.)

### (11) *Avoid the danger, or repair the ill.*

The protrusion of the second set of teeth is, in general, attended with no pain or uneasiness. This set, when complete, consists of thirty-two teeth, being twelve more than the first set. But though the regular number of the second set of teeth is thirty-two, a deficiency of this number sometimes occurs, and this deficiency is generally confined to the dentes sapientiæ, or wisdom teeth. Sometimes the lateral incisors, and not unfrequently one or both of the upper canine teeth, are found wanting; the protrusion of the dentes sapientiæ, at times, does not take place till the fortieth year, and, in some instances, not even then.

There are cases recorded of persons never having any teeth; one case of this kind has come under my own observation, and in that instance the gums were sufficiently callous to answer every purpose of mastication. I have frequently been informed that there is a family living in South Carolina, several members of which have no teeth, where the processes and gums are so perfectly well formed and elongated, as to make the defect hardly perceptible.

The removal of the temporary teeth is a curious operation of nature. The fangs being absorbed, they loosen by degrees, and are

pushed from their situations by the pressure of the second set. But there are instances in which this absorption does not take place, and, consequently, the second set not being permitted to come forward in their proper places, become irregular and deformed. The only means of preventing this irregularity and deformity, is timely extraction.

(12) *Should meet resistance from opposing force.*

There are instances, and those not a few, when relief can be afforded by no other means than by extraction; for this operation I prefer the improved forceps, in all cases where they can be safely applied, as being the best and safest instruments that can be used; but if the tooth is so much decayed as to render it likely to break where the points of the forceps embrace the tooth, I uniformly use a small key instrument, with the improvement I made on it many years ago, which is now in very general use, in England and in this country.

In order to do myself justice, I shall here make a short extract from Mr. Snell's work, lately published in London, the author of which, in speaking of the instrument, forgot to make mention by whom the improvement was made. "The moveable bolster," says he, "when in apposition to the gum, retains its relative situation, and the fulcrum of the instrument moves upon it; this I consider one of the most important improvements of the key instrument; its superiority over the old one is so evident, as to need no farther explanation."—(page 100.)

On the subject of this improvement, Dr. Thomas Hare, of London, as early as 1821, in his celebrated treatise on the "Stomach and Alimentary Organs of the human body," thus speaks: "The instruments hitherto in use for the extraction of teeth, have, to my apprehension, been deficient of that neatness and convenience for adaptation, which every operation on the human frame so justly demands. Besides his finished qualifications as a dentist, therefore, it gives me great pleasure to notice the merits of Mr. Eleazar Parmly, in contriving an instrument, admirable for its simplicity, which completely sets aside these obvious disadvantages." (Pages 295, 296. *London Edition*, 1821.)

I make the following extract from Mr. Koecker's work, to show that many persons have an unwarrantable antipathy to extraction; and that parents are frequently more in fault than their children, when resistance is made to the necessary performance of operations on the teeth. A want of decision on the part of parents, often subjects the child to serious injury, and the operator to many inconveniences, not the least of which is loss of time, which might be wholly avoided, if parents would send their children to the dentist with directions for his government, or submit them entirely to his

management, when placed in his hands for the benefit of his advice or operations.

It is the case of a child about ten years of age. "I discovered," says this writer, "several of her teeth to be carious, and proposed to remove the caries with a file, and to extract the first four large grinders, in order to prevent a recurrence of the disease, which had arisen from some irregularity of the teeth, owing to their crowded state.

"The poor child was greatly alarmed at this advice. Her eyes filled with tears, although her sisters, who were more familiar with the operation, where whispering her to be of good cheer. The affectionate mother was much grieved at the discovery, and the struggle between her good sense on the one hand, and her parental anxiety on the other, was so affecting, that I proposed another plan, by which I should be able to save all the teeth of her daughter. But to this proposal she would not consent, declaring that she was convinced my first advice was the best, and adding that she and her daughter would submit to the operation first proposed; desiring only a little time for preparation.

"About a week afterwards the little girl called upon me in excellent spirits; and after expressing her sorrow for not having submitmitted to the operation immediately, stated that her reluctance had principally resulted from the alarm of her mother, who had continued, ever since I last saw her, to express her wish that the operation should be performed, but had not courage enough to agree to its performance. She, the daughter, therefore, had at last resolved to come to me, without the knowledge of her mother; and having acquainted me with the circumstances, she sat down with sparkling eyes and a smiling countenance, and said, 'Now, if you please, sir, I am ready!'

"I shall not attempt to describe my feelings on this occasion; but merely state, that, in less than five minutes, the four permanent first large grinders, the largest teeth in her mouth, were wrapped up in a piece of paper, and she went away with them in her hand, rather dancing than walking, to surprise and relieve her anxious mother from fear and apprehension.

"I leave to parents, and particularly to mothers, to judge of the mother's feelings for so amiable a daughter."

"It is remarkable," says Mr. Fox, "but not less true, that there is scarcely any pain to which the human body is subject, that is so much under the influence of fear and hope, as the tooth-ache. This is experienced by almost every patient, and as constantly observed by every surgeon, by the pain generally leaving that individual who is under the immediate expectation of having the tooth extracted.

"Empirics are not wanting, who take advantage of this circumstance, and pretend to cure tooth-ache by certain charms and nostrums: indeed, at the moment, they appear to be successful, from the passions of fear or hope causing a temporary suspension of pain.

" The burning of the *Antihelix* of the ear, in order to relieve this complaint, must be ranked amongst the above methods of cure; it is one not worthy of notice, had it not been formerly a very popular remedy, and lately recommended in a periodical publication.

" The slightest knowledge of the distribution of the nerves to the teeth must convince every one, that a division of any part of the ear cannot separate the connexion that subsists between the teeth and the principal branches that go to the brain; and, therefore, no more benefit can be derived from this formidable operation, than may be attributed to the influence of fear." (*Fox on Human Teeth, Part* II., p. 38.)

(13) *For healthy action on the general frame.*

If we may judge from the opinions of the most able physicians and surgeons, it is evident that the digestion of our food depends greatly on the quantity of saliva which is elicited from the glands and mingled with it, and to its being properly masticated by the teeth, before it descends into the stomach. From this view we are led to consider the teeth as essential instruments in preparing our food. The front teeth are intended to take hold of and divide the food, and those placed back in the jaws to grind or comminute it, in which state only it is fit to pass into the stomach.

Digestion, then, is performed first by the action of the teeth, during which process the saliva is elicited from the glands in order to be mixed with it, and, as it is comminuted, descends into the stomach along with this powerful solvent, for its assimilation. It is there mixed with the gastric juice, and receives the other changes which convert it into nutritive matter.

If the teeth, then, are incapable of performing their office, the process of digestion must be imperfectly carried on, and the health of the individual suffer in proportion. The supply of nourishment to the system is the first and great function of life; and the health of the teeth, so essential to it, cannot claim too much attention from every individual.

(14) *Disgusting objects of deformity!*

" The influence which the teeth exercise over beauty, justifies the pre-eminence which I attribute to them over all the other attractions of the countenance. This ornament is equally attractive in both sexes: it distinguishes the elegant from the slovenly gentleman, and diffuses amiability over the countenance, by softening the features. But it is more especially to woman that fine teeth are necessary, since it is her destiny first to gratify the eyes before she touches the soul, and captivates and enslaves the heart." (*Dict. Sci. Med. Paris.*)

(15) *And spreads delight through all its wide domain.*

"Some idea of the rapid motion of the blood may be formed from the following calculation: the heart propels, at each pulsation, about one ounce of blood, and when it makes eighty pulsations in a minute, of course three hundred pounds of blood must pass through it in an hour, which is about twelve times the whole mass of blood in the body; and this rapid action is incessantly going on, night and day, through life." (*Fuller on the Teeth*, p. 47.)

(16) *And hence, defective, only from abuse.*

"The following is the composition of the teeth, as given by Berzelius, whose analysis appears to have been more elaborate than that of any other chemist. It will be found to record the occurrence of several substances as existing in the bone and enamel of the teeth, the presence of which has not been detected by others. According to this celebrated chemist, the enamel of the adult teeth contains, in one hundred parts:—

| | |
|---|---|
| "Phosphate of lime . . . . . | 85.3 |
| Fluate of lime . . . . . | 3.2 |
| Carbonate of lime . . . . . | 8 |
| Phosphate of magnesia . . . . | 1.5 |
| Soda and muriate of soda . . . | 1 |
| Animal matter and water . . . | 1 |
| | 100 |

"The bony substance is stated, by the same authority, to contain:—

| | |
|---|---|
| "Phosphate of lime . . . . . | 62 |
| Fluate of lime . . . . . | 2 |
| Carbonate of lime . . . . . | 5.5 |
| Phosphate of magnesia . . . . | 1 |
| Soda and muriate of soda . . . | 1.5 |
| Gelatine and water. . . . . | 28 |
| | 100" |

(*Bell on the Teeth*, pp. 6, 7.)

(17) *Assigned these organs in the frame of man.*

"The teeth, which are the only hardened parts of the animal frame exposed to the influence of air, to the influence of invasive

fluids, or called upon to exercise any sort of mechanical power without the intervention of membranous or other protection, and without the aid of lubricating fluid proper to themselves, or being placed beyond the mutilating influence of chemical agents, are of a more dense, refined, and minute crystalline texture externally, than any other of its objects; but this natural advantage of texture has become progressively lessened with the advancement of civilization." (*Hare on the Stomach*, p. 51.)

To the foregoing remarks of my distinguished friend, I will add, that the teeth are the hardest and most compact parts of the human frame, as is evident from their being found after interment in a perfect condition, after all the other bones have mouldered away.—Hence we may reasonably conclude, that, from their formation, they are little liable to decay; and that the inattention of the individual, and the action of extraneous matter upon them, are the chief causes of those diseases with which they are oftentimes affected.

Though to a superficial observer the teeth may appear to be a part of the body which is little deserving of regard, yet, those who consider the many functions which the teeth have to perform, must allow that their claims on our attention are as many and as strong as those of any other part of the human frame. Those means should be studied, therefore, which tend to preserve them in their original perfection; and every argument used, to impress upon the attention of society at large the importance of resorting to those means, whenever circumstances may require their aid.

(18) *A greedy vampyre, feasting on his heart!*

"The Brazilians, when first discovered by the Europeans, lived the most natural, original lives of mankind, so frequently described in ancient countries, before laws, or property, or arts made entrance among them; they lived without labor, farther than for their necessary food, by gathering fruits, herbs, and plants; they knew no drink but water; were not tempted to eat or drink beyond common thirst or appetite; were not troubled with either public or domestic cares, nor knew any pleasure but the most simple and natural." (*Sir John Sinclair's Code of Health*, Vol. IV. p. 333.)

"The chief food of the Japanese is rice, pulse, fruits, roots, and herbs; but mostly rice, which they have in great plenty and perfection, and dress in so many different ways, and give to it such variety of tastes, flavor, and color, that a stranger would hardly know what he was eating." (*Mod. Universal History*, Vol. IX. p. 62.)

"The philosophers of India eat nothing but rice, fruits, and herbs." (*Bartolomeo's Voyages, by Johnson*, p. 287.)

"The four most ancient orders of priests, the Rahans, the Bramins, the Magi, and the Druids, confined themselves to vegetable food, as

did also the Athenian prince. Triptolemus, who established the Eleusinian mysteries, and prohibited by law all injury to animals."—(*Monthly Magazine, February*, 1812, p. 21.)

If it should be deemed necessary to explain my motives for any seeming digression from my subject, in introducing matter that will no doubt be considered by some as wholly unconnected with the duties of a practical dentist, I would say, that it is my settled opinion, that whatever affects the general condition of the system, must, in a greater or less degree, affect the health of the teeth.

I have myself suffered much, in former years, from debility and other forms of indisposition, induced, I am persuaded, by gross and improper diet. For the last year I have abstained from all exciting drinks, have utterly relinquished the use of tea and coffee, have abstained from animal food of every name and nature, and by this course of conduct have found my health to be so much benefitted, that I feel it a duty as well as a pleasure, to endeavor to impress upon the reader the necessity of living more frugally, if he wish to enjoy that health of body and that tranquillity of mind which none can enjoy, for any great length of time, but such as live in accordance with the rules prescribed by all profound philosophers, both of ancient and modern times.

On this subject, and for the foregoing reasons, I have selected such passages from various distinguished authors as I have found true by experience, in the hope that this cloud of witnesses in behalf of temperance, health, and happiness, may influence some of my readers to sacrifice at least one debasing appetite on the altar of truth and reason.

(19) *Compared, intemperate luxury! with thine.*

"The throat has destroyed more than the sword."

MARTIAL.

"The nations that subsist on vegetable diet are of all men the handsomest, the most robust, the least exposed to diseases and violent passions; and they attain the greatest longevity. The Bramins of India, who frequently survive a century, eat nothing but vegetables. From the Pythagorean school, Epaminondas issued forth, so renowned for his virtues; Archytas, so celebrated for his skill in mechanics; and Milo of Crotona, for his strength. As vegetable diet has a necessary connexion with many virtues, and excludes none, it must be of importance to accustom young people to it, seeing its influence so powerfully contributes to beauty of person and tranquillity of soul. The children of the Persians, in the time of Cyrus, and by his orders, were fed with bread, water, and cresses; and Lycurgus introduced a considerable part of the physicial and moral regimen of these children into the education of those of *Lacedæmon*. Such diet prolongs infancy, and, of course, the duration of human life." (*Bernardin de St. Pierre's Studies of Nature*, Vol. IV. p 357.)

"As, in every period of history, it has been known, that fruit and vegetables alone are sufficient for the support of life, and that the bulk of mankind live upon them at this hour; the adherence to the use of animal food is no more than a persistance in the gross customs of savage life—and evinces an insensibility to the progress of reason, and to the operation of intellectual improvements." (*Dr. Lambe on Regimen*, p. 243.)

"The circumstance of weighing down the stomach with a load of food, particularly where relaxation of the general fibre is favored by inactive habits, must tend by degrees to increase its capaciousness; and in proportion as this increases, the energies of the brain and of all the organs of sense become diminished; the sight, the hearing, and the smell, are less exquisitely acute; the palate is not satisfied with simple viands; and even the sense of touch is rendered less nice.

"It was well observed by the late Dr. Saunders, that we are made gluttons from the cradle by the officiousness of our nurses; a child's health is disordered by being over fed; it cries and complains from the effects, and with a view to silence it, more and more food is given, so that the evil is increased instead of remedied, and the capacity of the stomach gradually extended far beyond the salutary bounds of nature." (*Hare on the Stomach*, p. 134.)

(20) *And drains destruction from the circling glass.*

"A vulgar error prevails, which is, that strong liquors are essential to bodily strength. This false opinion is partly grounded on the idea of a nutritious property in those liquors, and partly, perhaps, in a logical error in using the word *strong*, as being necessarily connected with strengthening the animal body. The first notion is entirely wrong; since it is proved, by continual evidence that strong liquors are inimical to animal life throughout the creation, and that no living animal or plant can be supported by such fluids; but that, on the contrary, they all become sickly and perish under their influence. I presume that no person would give a lamb, a calf, a chicken, or a duck, such liquors, with a hope of rendering them sooner fat, and of sweeter flesh, even if such liquors were so cheap as to render it an economical process. Yet many parents do this to their infant children! The fate of those individuals is truly deplorable, who cannot exist without an exhausting stimulus." (*Sir Anthony Carlisle's Lectures on fermented liquors.*)

Dr. Rush observes, that, "since the introduction of spirituous liquors into such general use, physicians have remarked that a number of new diseases have appeared among us, and have described many new symptoms as common to old diseases. Spirits, in their first operation, are stimulating upon the system. They quicken the circulation of the blood, and produce some heat in the body. Soon after

they become what is called sedative; that is, they diminish the action of the vital powers, and thereby produce languor and weakness."

(21) *Crowns high the board; for this the herd has bled.*

"Dr. Alphonsus Lercy, of Paris, has published an essay on certain diseases of men, which he traces to the animals on which they had fed; and he establishes the doctrine generally, that many diseases with which mankind are afflicted, are communicated by eating the flesh of animals." (*Monthly Magazine, June* 1815, p. 446.)

"The late Sir Edward Barry prevailed with a man to live on partridges, without vegetables; but after eight days' trial he was obliged to desist, in consequence of strong symptoms then appearing of an incipient putrefaction." (*Sir J. Sinclair's Code of Health*, Vol. I. p. 425.)

"The use of swine's flesh, in union with ardent spirits, is, in all likelihood, the grand cause of the scurvy, which is so common in the British nation, and which would probably assume the form and virulence of a leprosy, were our climate as hot as that of Judea." (*Dr. Adam Clarke.*)

"It is a remarkable fact, that at Heimaey, the only one of the Westmann islands which is inhabited, scarcely a single instance has been known, during the last twenty years, of a child surviving the period of infancy. In consequence, the population, which does not exceed two hundred souls, is entirely kept up by emigration from the main land of Iceland. The food of this people consists principally of sea-birds, fulmars, and puffins. The fulmars they procure in vast abundance; and they use the eggs and flesh of the birds, and salt the latter for their winter food. There are a few cows and sheep on the island, but the inhabitants are said to have no vegetable food."—(*Dr. Lambe's Reports on Regimen*, p. 197.)

"In ancient times, the medicines of the Indians consisted chiefly, according to Strabo, in regularity, temperance, and a choice of food." (*Bartolomeo, by Johnson*, p. 423.)

"The man who forsakes not the law, and eats not flesh meat, like a blood thirsty demon, shall attain good will in this world, and shall not be afflicted with maladies." (*Laws of Menu, from Sir William Jones*, Vol. III. p. 206.)

> "Happy the man, who, studying nature's laws,
> Through known effects can trace the secret cause:—
> He feeds on fruits, which of their own accord,
> The willing ground and laden trees afford:—
> Simple his beverage, homely is his food,
> The wholesome herbage, and the running flood."
>
> (*Dryden's Virgil, Georg.* II. l. 698.—III. l. 790.)

"The moral effect of aliment is clearly evinced in the different tempers of the carnivorous and the frugivorous animals. The former,

whose destructive passions, like those of ignorant man, lay waste all within their reach, are constantly tormented with hunger, which returns and rages in proportion to their devastation; this creates that state of warfare or disquietude which seeks, as in murderers, the night and the veil of the forest; for should they appear on the plain, their prey escapes, or, seen by each other, their warfare begins.—The frugivorous animals wander tranquilly on the plains, and testify their joyful existence by frisking and basking in the genial rays of the sun, or browsing with pleasure on the green herb. The same effect of aliment is discernible amongst the different species of men; the peaceful temper of the frugivorous Asiatic is strongly contrasted with the ferocious disposition of the carnivorous European." (*Jean Jacques Rousseau.*)

"The man who sheds the blood of an ox or sheep, will be habituated more easily than another to witness the effusion of that of his fellow men; inhumanity takes possession of his soul; and the professions whose object is to sacrifice animals for the purpose of supplying the supposed necessities of men, impart to those who exercise them, a ferocity which their relative connexions with society but imperfectly serve to mitigate." (*Encyclopedie Methodique.* Tome VII. Part. 1. liv. 65.)

"India, in fact, of all the regions of the earth, is the only public theatre of justice and tenderness to brutes, and all living creatures; for there, not confining murder to the killing of man, they religiously abstain from taking the life of the meanest animal." (*Ovington's Voyage to Surat*, p. 296.)

"The Gentoos rear numerous herds of cattle; but such is their veneration for these animals, on account of their useful and patient services to man, that to kill, or even maim one of them, is deemed a capital offence." (*M. de Page's Travels*, Vol. II. p. 27.)

"Among the Wallachians, though there is no positive institution to the contrary, yet the women never destroy the life of any creature. Whether this custom were founded by some of their ancient legislators, or whether it originated from accidental circumstances, is uncertain; but however that be, nothing can be more suitable to the gentleness and timidity which form the most beautiful and engaging part of the female character." (*Dr. Alexander's History of Women*, Vol. I. p. 366.)

"The Indian Bramins neither kill nor eat any sort of animal; and it is certain they have not done it for more than two thousand years." (*Dr. Clarke's Fleury*, p. 87.)

"As a proof of the havoc committed by more savage man on the creatures of his prey, it is said, that in Paris there are four thousand sellers of oysters, and that fifteen hundred large oxen, and above sixteen thousand sheep, calves, or hogs, besides a prodigious quantity of poultry and wild fowls, are eaten daily." (*Bayle's Dictionary.—Art. Ovid.*)

"When children are barbarous towards innocent animals, they will soon become the same towards men. Caligula, before imbruing his

hands in human blood, had made a practice of destroying flies. It may be said, that the moral behavior of man to man commences, in some measure, with that of an infant towards insects. Never, therefore, let a child acquire a truth by means of a vice; nor extend its understanding at the expense of its heart. Let it not study the laws of nature in the pangs of sentient beings; but rather in the succession of their enjoyments." (*St. Pierre's Harmonies of Nature*, Vol. I. p. 411.)

The celebrated Mr. John Tweddell, in one of his letters, thus beautifully expresses himself:—"I no longer eat flesh meat, nor drink fermented liquors. As for the latter, it is merely because I do not believe that they can ever be good for the constitution, and still more especially with a vegetable diet. With regard to the flesh of animals, I have many times thought on the subject. I am persuaded we have no other right than the right of the strongest, to sacrifice to our monstrous appetites the bodies of living things, of whose qualities and relations we are ignorant. Different objections which struck me, as to the probability of good from the universality of this practice, have hitherto held me in indecision.

"I doubted whether, if this abstinence were universal, the animals which we now devour might not devour, in their turn, the fruits and vegetables reserved for our sustenance. I do not know whether this would be so; but I do not believe it: it seems to me that their numbers would not augment in the proportion which is apprehended. If, on the one hand, we now consume them with our teeth, on the other, we might then abandon our schemes and inventions for augmenting the means of propagation. Let nature follow her own course with regard to all that lives. I am told that they would destroy each other:—In the first place, the two objections cannot exist together: if they would destroy each other, their numbers would not be excessive. And what is this mutual destruction to me? Who has constituted me dictator of the realms of nature? Why am I umpire between the mistress and her servants? Because two chickens fight till one dies, am I obliged to worry one of them to prevent the engagement? Exquisite and well imagined humanity!

"On the other hand, let precautions be adopted against famine, when experience shall have shown the necessity of them; in the mean while, we are not called upon to bury in our bowels the carcasses of animals, which, a few hours before, lowed or bleated; to flay and to dismember a defenceless creature; to pamper the unsuspecting beast that grazes before us, with the single view of sucking its blood and grinding its bones; and to become the unnatural murderers of beings, of whose powers and faculties, of whose modes of communication and mutual intercourse, of whose degree of sensibility and extent of pain and pleasure, we are necessarily and fundamentally ignorant." (*Life and Remains of J. Tweddell*, p. 215.)

(22) *Suspend forever all their songs of love!*

"Abstinence," says Shelley, "from animal food, subtilizes and clears the intellectual faculties." For all the sensualities of the table he had an ineffable contempt, and, like Newton, used sometimes to ask if he had dined. (*Vide Life of Shelley.*)

"So many dishes, so many disorders."

SENECA.

——— "Well observe
The rule of *not too much*, by temperance taught,
In what thou eat'st and drink'st; seeking from thence
Due nourishment, not gluttonous delight."

MILTON.

"By salt, Cayenne pepper, and other high seasonings, they stimulate the appetite, turn round the wheels of life too rapidly, and wear out the body, or machine, before its time; whereas, those who abstain from such wine, spirituous liquors, and hot spicy aliments, acquire an exquisite degree of delicacy in the sense of tasting; their spirits are more equal, their feelings more pleasurable, and, generally, they are much longer lived." (*Dr. Abernethy.*)

"Temperance and exercise are the parents of health."

MASON.

The common ingredients of health and long life are:—

"Great temperance—open air,
Easy labor, and little care."

ANON.

"It appears that the structure and uses of the teeth are more perfectly equalized in the human subject, than in any other animal. It is true that, in some tribes of animals, whose habits require the greatest possible extension of the office of a particular class of the teeth, a corresponding development of that class is found to take place, to a much greater degree than in man.

"Thus, in the *carnivora*, the cuspidati are greatly elongated and strengthened, in order to enable them to seize their food and to tear it in pieces; in the *rodentia*, or gnawing animals, as in the beaver, for instance, the incisors are remarkably long, and exhibit that extraordinary development which their peculiar habits demand, and in the graminivorous animals, the *ruminantia* especially, the molares are found to occupy the most conspicuous situation. But, in each of these instances, the other kinds of teeth are found to be proportionably of less importance, and in some cases, are actually wanting. In man, on the contrary, every class appears to be equally developed, to a moderate, though a sufficient degree, and to exhibit a perfection

of structure which may be considered as being the true type, from which all other forms are mere deviations. It becomes, therefore, a question of some interest, and perhaps of no less difficulty, to what food the structure which has just been demonstrated is particularly adapted. The opinion which I venture to give has not been hastily formed, nor without what appeared to me sufficient grounds; I advance it, however, with diffidence, and do not profess to consider it much more than hypothetical.

"The endowment of reason, that greatest, best gift of the Creator, appears, if we consider the perfection of human organization, to be particularly, and, in its highest degree, even exclusively, adapted to the conformation and requirements of man. This high and divine endowment should never be lost sight of in our reasonings on the human structure, and the physiology and habits of our species, as it is only with the allowances and modifications which the possession of a quality so infinitely higher than the instinct of other animals necessarily supposes, that the actual habits of man can be viewed as compatible with his organization. Although these habits, now essentially arising from, and combined with a state of civilization, which, in a greater or less degree, must be allowed to exist in every known tribe of our species, cannot be considered, in any one instance, as actual and exclusively *natural;* yet we may be led, by a careful examination of the structure of the different organs, and by an analogical comparison of them, as they exist in man, with the same organs in those animals which most nearly resemble him in structure, but which are still found in a perfectly natural state, to a plausible supposition, at least, of what were originally his natural habits; and which would have still continued so, but for those changes which have arisen from the possession of this very endowment.

"With this view of the subject, it is not, I think, going too far to say, that every fact connected with the human organization goes to prove, that man was originally formed a frugivorous animal, and therefore probably tropical, or nearly so, with regard to his geographical situation. This opinion is principally derived from the formation of his teeth and digestive organs, as well as from the character of his skin, and the general structure of his limbs. It is not my intention now to go farther into the discussion of this subject than to observe, that if analogy be allowed to have any weight in the argument, it is wholly on that side of the question which I have just taken.—Those animals whose teeth and digestive apparatus most nearly resemble our own, namely, the apes and monkeys, are undoubtedly frugivorous; but as, from their organization, they are necessarily tropical animals, and without the gift of reason, by which they might have overcome the difference of temperature by artificial means, they remain still restricted to their original food, and confined to the very limited climate to which their structure peculiarly adapted them. The reasoning powers of man, on the contrary, have

enabled him to set climate at defiance, and have rendered him, in all cases, more or less an artificial being. No longer restrained within that range of temperature to which the delicacy of his frame, no less than the nature of his original nutriment would have confined him, he becomes the denizen of every climate, and the lord of terrestrial creation." (*Bell on the Teeth*, pp. 33—36.)

(23) *Of bloody banquet for the monster—man!*

"Temperance, cleanliness, and abstinence, have greater power over the soul and body than most in our days imagine. Some of the ancients have delivered it as a maxim, 'That none could understand God and his works, and enjoy perfect health and long life, but those that abstain from flesh, wine, and vices, bounding their desires according to the ends and necessities of nature.' Most men will in words confess, that there is no blessing this world affords comparable to health, yet rarely do any of them value it as they ought to do, till they feel the want of it. To him that has obtained this goodly gift, the meanest food, even bread and water, are most pleasant, and all sorts of labor and exercise delightful. But the contrary makes all things nauseous and distasteful. What are full-spread tables, riches, and honors, to him that is tormented with distempers? Happy it were, if men did but use the tenth part of the care and diligence to perserve their minds and bodies in health, as they do to procure riches, which serve them chiefly to procure those dainties and superfluities which generate disease, and are the causes of many other evils, there being but few men that know how to use riches as they ought. As little and as mean food and drink, will maintain a lord in perfect health as the poorest peasant. But, alas! the momentary pleasures of the appetite entice most people to exceed the bounds of necessity or convenience, and many are seduced by a false opinion of nature, childishly imagining that the richer the food, and the more they consume, the more they shall be strengthened thereby. But experience proves the reverse; for the persons who accustom themselves to the richest compound food, and most cordial drinks, are uniformly the most infirm and diseased. People much mistake in supposing, that, so long as the appetite desires and the pleasure of eating continues strong, they may eat on without damage to their health. The truth is, this is one of the chief reasons why men are gluttons; and there is little difficulty in temperance, save only in this particular; it being somewhat hard for a healthy man to give off eating in the midst of the pleasure he receives by it, especially when meats by art are made on purpose, not only to prolong the appetite, but also to delight it. Varieties of food are always dangerous, if great care and temperance be not observed. He that limits his desire by wisdom, and has the understanding both of the quality and the quantity, may eat of sundry sorts of

food at once ; but the ignorant and unwise very rarely do it without prejudice to their health." (*Tryon's Way to Health, Long Life, and Happiness, London*, 1691, pp. 41, 42, 43.)

The same very ingenious writer remarks, page 137, " If you will be so habituated and wedded to your unhealthy customs, that you, ask not whether nature be weak and impotent, then you may mix your food with all the varieties that the East and West Indies produce ; you may make your drink as strong and cordial as you wish ; you may wrap yourselves at night in beds of down ; and when it is nine or ten o'clock in the morning, look that you have a good, rousing fire in your chambers, and breakfast ready ; and two or three hours afterwards, let a plentiful dinner of varieties be made ready, with strong and inflaming liquors. This is the trade that many thousands of this nation pursue, as if they studied to bring diseases upon themselves, and dig their graves with their own teeth ; for, in the midst of all their affluence, wherein they esteem themselves happy, they are yet most miserable."

### (24) *The safe and luscious diet of mankind.*

Of all the forms of vegetable matter proper to this climate, the farinaceous grains are undoubtedly the most important ; but in making them into bread, the following rules from Tryon should be well observed ;—and his advice will be found to have lost none of its value by coming from a writer in the reign of William and Mary.

" If you set any value on health, and have a mind to preserve nature, you must not separate the finest from the coarsest flour, because that which is fine is naturally of an obstructive quality ; but, on the contrary, the other, which is coarse, is of a cleansing and opening nature ; therefore, that bread is best which is made of both together. In the inward bean and skin of the wheat is contained an oily quality, of a sweet nature, by reason whereof, bread made of fine and coarse together will not only be sweeter, and keep longer moist, but is also more wholesome ; easier of concoction. It must be confessed, that the nutritive quality is contained in the fine flour, yet, in the branny part is contained the opening and digestive quality and there is as great a necessity for the one as for the other, for the support of health. By what has been said, we may gather that the eating of fine bread is inimical to health, and contrary both to nature and reason ; and was at first invented to gratify luxurious persons, who are ignorant both of themselves and of the true virtue and efficacy of natural things." (*Tryon's Way to Health*, pp. 147, 148.)

The same author, pp. 286, 287, relates the following anecdote of Henry VIII. " There is a pleasant story of king Henry VIII., in the first part of his reign, riding a hunting ; and being hungry, he strayed from his attendants, and came alone to a monastery about

dinner time. The fat, lazy abbot, welcomed him very kindly, for hearing that the king was in that country, he concluded this was one of his guards. At dinner they had great varieties, and the king fed like a farmer on a piece of roast beef. But the abbot, who daily crammed himself with delicacies, could scarce relish a bit of any thing before him; and pleasantly said to the king:—'Honest friend, I would give five hundred pounds if I could pick so heartily as you do on a piece of roast beef.' The king returned him some small compliment, and after dinner took his leave. About a fortnight after, the king sent a messenger for the old fulsome abbot, and ordered him to be carried to the tower, there to be close prisoner, and allowed a given quantity of small beer and bread every day, but no other food. The abbot could not imagine what he had done to occasion such an imprisonment; and being thus dieted, he soon came to have a good stomach. After about a month, the king ordered the keeper to carry him in a good piece of hot roast beef, on which the abbot fell with such violence as if he would have eaten it at a mouthful. The king, who was stationed in a room where he could see how he laid about, at last stepped in and demanded his five hundred pounds. 'For,' said he, 'you said you would give it; and I have performed the cure, and got you a better stomach than all the doctors in England would have done:'—and so upon payment of the five hundred pounds, discharged him."

"No flocks that range the valley free,
To slaughter I condemn,
Taught by the Power that pities me,
I learn to pity them.

"But from the mountain's grassy side,
A guiltless feast I bring;
A scrip with herbs and fruits supplied,
And water from the spring."

*Goldsmith's Hermit.*

"To mix the food by vicious rules of art,
To kill the stomach, and to sink the heart,
To make mankind in social virtue sour,
Cram o'er each dish, and be what they devour;
For this the kitchen muse first framed her book,
Commanding sweat to stream form every cook:
Children no more their antic gambols tried,
And friends to physic wondered why they died."

*Barlow's Hasty Pudding*, Canto II

"In China, a single acre of land sown with rice, produces sufficient for the consumption of five persons for a year, allowing two pounds and a half a day to each." (*Breton's China*, Vol. IX. p. 29.)

"The peculiar property of the corn plant, is that of being produced, in some shape or other, in every part of the world, from the rice of the Ganges to the barley of Finland. It is, however

remarkable, that it no where grows spontaneously, like other plants, so that providence appears to have devolved altogether on our species the charge of maintaining and extending its cultivation. Bread is, of all vegetable nourishment, the most substantial and durable." (*St. Pierre's Studies of Nature*, Vol. I. p. 22.)

> "The living herbs spring up prefusely wild,
> O'er all the deep green earth, beyond the power
> Of botanist to number up their tribes:
> But who their virtues can declare? who pierce
> With vision pure, into the secret stores
> Of health, and life, and joy! The food of man,
> While yet he lived in innocence, and told
> A length of golden years unfleshed in blood,
> A stranger to the savage arts of life,
> Death, rapine, carnage, surfeit, and disease,
> The lord, and not the tyrant of the world."
>
> THOMSON.

"Milk is in part vegetable food; and as such is used by all pastoral nations, and serves in a measure as a substitute for it." (*Dr. Lambe's Reports on Regimen*, p. 167.)

"To prevent indigestion, milk ought not to be eat together with flesh." (*Dr. Willet.*)

"Eggs contain a larger proportion of pure nourishment than any other food. They are a most valuable article, not only when consumed by themselves, but when mixed with other things. Raw, poached, soft boiled, or in any ways lightly cooked, they are gently laxative, and sit easy on most stomachs." (*Sir John Sinclair's Code of Health*, Vol. I. p. 414.)

"An entire diet of vegetable matter gives to the disposition a gentleness, softness, and mildness of feeling, directly the reverse of that ferocity of mind and fierceness of character which form the leading feature of all carnivorous animals, it has also a particular influence on the powers of the mind, producing liveliness of imagination and acuteness of judgment in an eminent degree. (*Sir John Sinclair's Code of Health*, Vol. I. p. 423.)

(25) *Nor meet one star that gilds the glowing pole!*)

"Mœnenius Agrippa dispelled the prejudice of the Roman people, by a fabulous allusion to the absurdity and blindness of all the members of the human body joining in rebellion against the stomach:—and if fable or fact could be adduced with such successful persuasion to dispel the blindness of modern luxury, the stomach would not so perpetually be excited as it is, to the contrary office of waging war against all the members of the body." (*Thomas Hare on the Stomach*, &c., *London*, 1821, p. 300.)

"The man who perceives in his own soul the supreme soul present in all creatures, acquires kindness towards all, and shall be absorbed at last in the highest essence, even in that of the Almighty himself." (*Laws of Menu.*)

(26) *Where health and purity should ever reign.*

Tartar is an accumulation of acrimonious earthy matter, round the necks of the teeth. This accretion arises from the fluid secretions of the mouth, and consequently, few persons are entirely free from it, though some, from the state of their general health, may be more subject to it than others. The teeth to which it is generally attached, are those that are the least acted upon in the process of mastication; and the molares of the upper, as well as the incisors of the under jaw, being situated nearer to the salivary ducts, more readily become affected. Whenever tartar is permitted to accumulate around the teeth, the gums, the membrane lining the alveoli, and even the aveolar process itself, are liable to suffer through the powers of absorption being increased by inflammatory action. It thus not unfrequently happens, that persons through want of proper care and attention to the removal of tartar, have lost the whole of their teeth.

"The formation of a calculous deposit upon the teeth, in a greater or less degree, may almost be said to be universal; for, although in many persons of sound health and temperate habits, it is possible, by care, to remove it so immediately after its deposition, that the teeth are kept generally free from it, still, I believe it is in all cases produced, and would accumulate, but for constant attention to the proper means for its removal. It consists of calcareous substance, which, when first deposited, is soft, friable, and readily crumbling under the finger; but gradually, and, as it were, by a slow kind of crystallization, acquires almost a rocky hardness. Its usual color is a dull, whitish yellow, or buff; though in some cases it is dark brown, or black, and in others has a greenish hue. It also varies in the character of its surface, being generally smooth, especially in those parts where the tongue acts constantly upon it; but occasionally, in other parts, exceedingly rough and rugged. It is susceptible of being stained by any coloring matter frequently taken into the mouth during its deposition; as, for instance, from smoking tobacco, or from the long continued use of colored gargles, especially such as are composed of articles which are not capable of perfect solution in aqueous menstrua.

"With the exception of gangrene, there is no kind of injury to which the teeth are exposed, so commonly and so extensively destructive as this concretion." (*Bell on Human Teeth*, p. 192.)

(27) *As death disparts the body from the soul.*

"It will be objected, perhaps, to what we have said, that many people who have beautiful teeth, and a healthy mouth, pay no attention to these parts; whilst those who attach a great value to them, and take the greatest care of them, have much trouble in preserving them. But it will also be an easy matter to reply to these objections, by making a comparison between children born of parents of sound constitution, and reared in the country, and those born in cities, whom an ill conducted education has predisposed to a debility of organization often to be recognised by the state of their teeth alone.—It ought, therefore, perhaps to be remarked, that diseased teeth with many individuals, originate in an organic disposition, which may be transmitted from fathers to their children." (*Gerbaux on the Teeth, Edinburgh Edition*, p. 23.)

(28) *The brush, the dentrifice, and, from the spring.*

"It is a religious precept," says Tournefort in his voyage to the Levant, "among the Mussulmen, to make the little ablution with the face turned toward Mecca; to rinse the mouth thrice, and clean their teeth with a brush." This shows how highly this custom is esteemed among a people, who formerly were forbidden, according to Menavius, to have a tooth extracted without permission from the emperor. Let children be taught by their parents the proper degree of care necessary for their teeth; they generally imitate them even in their sports:—here the agreeable lesson will be converted into a useful habit. (*Duval*, p. 75.)

(29) *And blooming health will soon reward it all.*

"As soon as the first teeth of a child are completed, they should be brushed twice, or, at least, once a day, with a soft brush and water. When children are thus early familiarized to the healthy and necessary custom of brushing the teeth, it becomes a fixed habit, and they find it ever afterward absolutely essential to their comfort. In winter, or in cold weather, the water used in brushing the teeth should be tepid. It is quite unnecessary to use any kind of powder to the first teeth of children." (*Murphy on the Teeth, London*, 1811, p. 118.)

(30) *Restore her hopes, and make her lovely still.*

Tartar is more safely removed by instruments than by such chemical solvents as have been too commonly employed; for, although

the injury they occasion is not at first perceptible, they ultimately disorder the substance and texture of the teeth. This is not the case when the operation is properly performed by means of instruments; and is attended with neither pain to the person, nor danger to the enamel.

The manual operation of cleaning the teeth with instruments, is not performed with equal skill and delicacy by all who practise it.—There are, of course, as many different degrees of merit in dentists, as there are in the practitioners of any other art or science.

(31) *The offspring of an epicurean age.*

"But just disease to luxury succeeds,
And every death its own avenger breeds;
The fury passions first from blood began,
And turned on man a fiercer savage—man."

*Pope's Essay on Man*, Epistle III.

(32) *And bears them all successively away.*

Caries is the most frequent disease of the teeth. The general seat of it is, on the sides of the front teeth and in the centre and sides of the back ones. Its progress through all its different stages is easily marked. First of all, a small dark spot appears on the enamel, through which the disease quickly passes into the internal structure of the bone. When this has taken place, the least pressure from chewing any hard substance is liable to break away portions of the enamel, and thus the internal part becomes subject to every injury which can arise from extraneous matter lodging therein. The molares are more subject to this disease than the front teeth; first, because their indented surfaces more readily retain any extraneous matter; and secondly, because they are less in view, and consequently less attended to.

In the enamel of the most apparently perfect teeth, small cracks may, with a magnifying power, easily be discovered. These, although unnoticed by the individual, are sufficient to admit disordered fluids, and to account for many forms of decay. This may likewise account for decay taking place in the broad surfaces of the molares, where the points of contraction always produce a depression, and thus afford a convenient lodgment for acrid saliva and other decomposing agents.

From my own observations I am induced to believe, that caries is universally caused by the action of external agents; and therefore cleanliness, and a due regard to the general health, after the proper offices of the dentist are performed, is the only guard against it. But some teeth, from their being of less dense structure, are less capable

of resisting the action of decomposing matter, and consequently will require greater attention to ward off disease.

Mr. Brewster, of Charleston, whose experience, from having been fifteen years in extensive practice, has given him ample opportunities of judging, has, in a manuscript with which he politely furnished me, enumerated the following as the principal causes of decay. Constitutional softness of the teeth; The use of medicines during dentition or in after life; the too free use of acids, which, uniting with the lime in the enamel, destroys its strength; A too slow growth of the teeth between the time of protruding their points through the gum, and the full development of their crowns. It will often happen that the projecting points of the grinding teeth pass through the gum, and there for a long time remain with a portion of the surface, comprehending the indentations of the grinding surface, partially covered with the gum. As there is no union between the enamel and the gum, fine and soft particles of food insinuate themselves between the gum and the tooth. This matter decays, and the acid generated thereby acts perniciously on the enamel, and lays the foundation for subsequent decay of the tooth. The remedy is simple, and, in most cases, effectual. It consists in removing the gum from the top of the tooth, which is performed by a skilful operation, with little or no pain to the patient. This prolific source of decay I am not aware has ever been noticed by any writer on the teeth. Another prolific source of decay is the permitting a new tooth to come in contact with the decaying part of an old one. The remedy consists in removing a portion or the whole of the old tooth.

The too free use of mercury; The accumulation of tartar; Neglect of cleanliness by suffering the particles of food to remain between the teeth after meals; Irregular living, or any other cause which occasions a disordered stomach; Extremes of heat and cold; All Acids, whether in fruits, powders, or lotions; Metalic toothpicks; Injudicious dental operations; Most of the nostrums administered for tooth ache.

"I propose," says Mr. Bell, "to substitute for the word caries, the term gangrene of the teeth, which expresses the real nature of the disease. It may be defined—mortification of any part of a tooth, producing gradual decomposition of its substance. It usually attacks the crown of the tooth; sometimes, though rarely, the neck; but I believe it scarcely ever makes its first appearance on the root. It invariably shows itself on the external surface of the bone, immediately underneath the enamel, and its existence is, in many cases, first indicated by an opaque spot on that substance, occasioned by partial breaking down of its crystalline structure; in others, its presence is shown by the discolored bone being seen through the semi-transparency of the enamel." (*Bell on the Human Teeth*, p. 118.)

I have made the foregoing quotation from the work of Mr. Thomas

Bell, with whom I once conversed personally on the doctrine contained therein, for the purpose of expressing my entire dissent from the opinion held by most of the writers on this subject, in relation both to the local origin, and the immediate cause of caries, or dental gangrene. Some of these writers divide the disease into two kinds, which they distinguish by the names external and internal caries; while others inculcate the doctrine so hostile to all my experience and observation, that caries commences, as Mr. Bell says in the passage quoted, on the surface of the bone, under the enamel, and that the disease becomes visible through the semi-transparency of the enamel, which itself is destroyed by being broken away by mechanical violence. Now I must aver, that after a constant and extensively diversified practice of nineteen years, both in Europe and America, I have never known a solitary instance of this disorder which was not evidently occasioned from external causes on the surface of the tooth, penetrating first through the enamel, if on the body of the tooth, and then assailing the bony structure.

There are teeth that are faulty, both in their enamel and organization; owing, probably, to constitutional or hereditary peculiarities which have not, as I am aware, ever been satisfactorily explained by any author.

As to the cause of caries, I published my opinion many years ago, first in London, and afterwards in this city, and have seen no cause to espouse a contrary opinion. I consider the immediate and exciting cause of dental decay to be always external to the tooth itself, and to consist of certain corrosive menstrua, to which these organs are exposed from bodily disease, improper aliments, powerful medicines and the thousand other sources of acrid filth and destructive poisons that become concentrated in the mouth and deposited upon the teeth. These procuring causes of caries may indeed derive their origin from constitutional diseases acting upon the system at various periods of life, but whatever internal defect of structure a tooth may derive from original organization, how much soever it may be predisposed to take a diseased action under favorable conditions, still, the tooth never decays till externally affected by putrescent, or corrosive, or disorganizing matter, which breaks up its structure.

That such has been my uniform opinion, will be seen from the following extract from the work on the stomach and digestive organs, published by Dr. Thomas Hare, Fellow of the Royal College of Surgeons in London, in 1821.

"The theories concerning the cause of decay in the teeth which seem to have met most attention, are those referring it to an undue degree of compression exerted by the irlateral surfaces on each other, and to a putrefactive fermentation of extraneous matter lodging in the interstices. The former has been ably set forth by Mr. Bell, of St. Thomas's Hospital, in the Medico-chirurgical Transactions; the latter was published about two years ago, by Mr. Parmly." (page 269.)

(33) *A dream forgot, a tale of other years.*

Dr. Fitch alleges the following three modes in which disordered teeth contribute to the production of that distressing disease—the dyspepsy, or indigestion.

"First, by preventing a proper mastication of the food.

"Secondly, by the ulcerated and putrid matter which passes from the teeth and gums, along with the aliment, to the stomach.

"Thirdly, the irritation produced by diseased teeth, being often so great as to disturb the healthy functions of the system, and of the stomach in particular." (*Fitch on the Teeth*, p. 308.)

(34) *Most justly damned to everlasting fame!*

"The pain commonly termed the tooth-ache is one of the most excruciating to which we are liable. It is caused by an inflammation of the membrane lining the cavity. In inflammation, one of the consequences is a swelling of the part, which is generally followed by a diminution of the pain, the degree of which seems to be regulated by the resistance and compression which the inflamed vessels suffer from the surrounding parts. The membrane of the tooth being situated within a cavity which is incapable of extension, there must necessarily exist an insurmountable obstacle to the swelling of the membrane; and this it is which renders the pain so extremely acute. In some few instances, caries will proceed without being accompanied by any sensations; the tooth gradually breaks away, until the whole of it is removed." (*Fox*, Part II. p. 25.)

"The pain called tooth-ache, which Galen very properly considered the most cruel and grievous of all pains that are not mortal, seems clearly to be occasioned by decayed portions of bone, no matter how minute, acting by contact on the nerves of the teeth.—And I firmly believe the pain is never felt until the caries, which always acts from without inwards, has actually met a branch of nerve.

"No species of animal matter, in a state of decay, is so offensive to the vitality of the adjoining substance, whether nerve, or muscle, or membrane, or any part or portion of the living body, as decayed bone. How very small a portion of decayed bone in a tooth is capable not only of causing the most agonizing pains, but also of communicating a fœtor to the breath, is inconceivable by those who have not pursued the inquiry with minuteness: and this offensive matter, when it thus has an opportunity of acting, communicates, through the medium of the nerves, a sympathetic pain to the teeth which are perfectly sound." (*Hare on the Stomach*, p. 240.)

In addition to the preceding remarks, I observe, that the tooth-ache is sometimes so severe as to produce alarming derangements of health;

while at other times it is merely an annoying sensation, which can scarcely be termed pain. The cavity of the tooth, in most cases, is the original seat of this malady. But as the teeth are supplied by ramifications of those nerves which supply different parts of the face and head, it frequently happens that one or more of those parts may suffer more severely than the tooth itself.

Diseases in the wisdom teeth of the lower jaw affect the ear; and when those of the upper jaw are diseased, the temples generally become affected. The effects of disease in one tooth, from nervous influence, is sometimes felt in the opposing tooth of the other jaw.

No certain treatment can be laid down for the tooth-ache; it must be regulated entirely by a knowledge of the cause, whether arising from decay, the irritation of tartar, the application of cold, or merely as a sympathetic affection. The disease which occasions this malady is insidious in its progress, dangerous and sometimes fatal in its consequences; but the danger more frequently arises from an improper application of remedies, than from the disease itself. Powerful remedies for the tooth-ache, as well as for other diseases, are hazardous in the hands of the ignorant.

(35) *And tooth-ache came, the terror of mankind!*

"When pains in the teeth show a disposition to change their places with great facility, like all rheumatic affections, they may yield to the most insignificant means, even to the touch of some amulet, applied with an air of mystery and confidence which imposes upon the patient. Every one knows, that in timid people, the presence of a surgeon, in most instances, is sufficient, for a time, to dispel the pain of tooth-ache. It is particularly for these pains that some dentists have a favorite odontalgic elixir, of whose sovereign virtues they are so fond of boasting. These liquors are almost all spirituous tinctures, whose powerfully stimulating action often suffices to suspend the pain.

"In fact, a drop of the tincture of opium, or any one of the essential oils, applied to the part by means of a little cotton, may produce an instantaneous abatement of the pain, but which seldom fails, sooner or later, to return. Frequent successes of this kind, of which marvellous accounts are daily published, have successfully brought into vogue numerous elixirs and various other means, all more or less ridiculous." (*Gerbaux*, pp. 80, 83.)

"Doctor Sims, a celebrated practitioner in London, relates that he was such a martyr to the tooth-ache, that he was confined to his house for several weeks together by that malady, but after he avoided taking his food either hot or cold, he entirely escaped it. He was particularly careful not to take soup or any other liquid, of a temperature higher than ninety—eight degrees less than blood heat.

He was induced to try this experiment, by reflecting that heat expanded all bodies. When applied to a tooth, therefore, it must diminish its cavity, compress the nerve, and consequently produce pain. However defective this theory may be, the practice of endeavoring to preserve those parts in an equable temperature, will be found to be highly important." (*Duval.—Atkinson's translation*, p. 76.)

(36) *To mercy deaf, by sorrowing man accurst.*

The following characteristic lines are from the "Address to the Tooth-ache," by Robert Burns:—

"My curse upon your venomed stang,
That shoots my tortured gums alang,
And through my lugs gi'es money a twang,
Wi' gnawing vengeance!
Tearing my nerves wi' bitter pang,
Like racking engines!

"When fevers burn, or ague freezes,
Rheumatics gnaw, or cholic squeezes,
Our neighbors' sympathy may ease us
Wi' pitying moan;
But thou—the hell o' a' diseases,
Ay mocks our groan!

"Where'er the place be priests ca' hell,
Whence a' the tones o' misery yell,
And ranked plagues their numbers tell,
In dreadfu' raw;
Thou—tooth-ache, surely bear'st the bell,
Amangst them a.'"

"We were interrupted by Mr. L. He is one of your plain, common sense sort of people, practical, fixed in his own opinions, a little inclined to stoicism, with a dash of savage philosophy, partly affected to hide tenderer feelings, and about six feet and an inch high, without his shoes.

"'What's the matter with your face?' inquired he.

"'Tooth ache,' said I, 'all swelled: keeps me awake, and'———

"'Try my *nitri dulcis* and *alum pulv.*,' said W.

"'Curse your *nitri dulcis* and *alum pulv.*,' said L., 'there is but one cure for the tooth-ache, and that's a sure one,'

"I looked tremblingly up. He had his great, square fist doubled, as if he held something in his hand. He raised it to his mouth, and screwed around with the motion of a dentist, uprooting some huge, double grinder, with three diverging prongs. My friends were

silent. I turned a little pale. He saw what an impression he had made, and with a grin that went to my very soul, added ;—

"'Out with it, you fool, and there's an end. It's worth all the *nitri dulcis* and *alum pulv.* in the universe.'

"There was a melancholy truth in what he remarked. It sunk into my heart; I made up my mind; and when my worthy advisers left me, I walked around to Mr. ———. There was an awful silence—a moment of intense fear—a slight struggle—an agony—a cry from the heart's core—I came out the happiest of men."—(*Dreams and Reveries of a Quiet Man, by Theodore S. Fay, Esq.* Vol. I. p. 187.)

(37) *And stops the fearful progress of decay.*

As great disadvantages frequently arise when teeth are decayed, from their crowding against each other, it becomes expedient, with a view to stop the progress of incipient disease, to remove portions from their sides by means of a file; but, if this operation be not performed before considerable parts are decayed, it must not be expected to afford lasting benefit. The incisors and canine teeth may be filed with the greatest probability of success; but the bicuspides and molares have such large surfaces, that caries often extends itself by far too deep before it is observed, to be effectually removed by the file. Little advantage can be expected from filing, unless the whole diseased part be effectually removed.

It is proper to observe, that there are some teeth, which, although attended to at an early period, are but little benefitted by the operation, either from some original defect in their organization, or certain peculiarities of constitution: but this is, by no means, commonly the case; and the instances of its proving essentially serviceable are so innumerable, that it may be recommended with the highest confidence of success.

(38) *Performs in nature one substantial use.*

The benefits of the operation of stopping the teeth are so truly important, that it is impossible to recommend it too earnestly to the public; for thousands of the most useful teeth, which otherwise would, on account of their painfulness, be sacrificed by extraction, may thus be preserved, not only for many years, but for the remainder of a long life.

The finest teeth are commonly the most highly organized, and therefore become more acutely painful when only a very small portion is decayed. The operation of stopping will always succeed, if performed before the decay has reached the sensible part of the

tooth, unless its cavity be superficial, or of a funnel shape, and not capable of being sufficiently deepened for retaining the gold. In such cases, all attempts at stopping it will be fruitless. But if the depth be sufficient towards the sensible part of the tooth to allow of the excavation being made larger, or directed obliquely or otherwise, as may be most eligible for receiving and securing the gold, the caries may be so effectually arrested as to cause no farther uneasiness to the patient.

"There is no object connected with dental surgery of more importance than that of stopping. There is none better deserving the attention of the student, nor is there any in which the dentist may more successfully display his professional skill. Were we to judge, indeed, from the almost innumerable cases of failure which occur, we might conclude that the uncertainty of the operation was so great as essentially to diminish its utility and importance. These cases, however, generally occur under the management of ignorant persons, who are alike incompetent to the mechanical and the surgical part of the operation, and who are equally incapable of choosing a proper time for its performance." (*Snell on the Teeth*, p. 151.)

"If properly done," says Dr. Fitch, "this is one of the most useful operations in dental surgery; and if practicable, it bears the preference to any other operation for the cure of diseased teeth. It should be an object of solicitude in every case, when we are called upon to extract or file the teeth, to obviate both operations by plugging them, if in any way expedient or practicable." (*Fitch on the Teeth*, p. 398.)

"I have no hesitation in affirming this to be one of the most important and useful operations that can be performed." (*Sigmond.*)

"By the beautiful and useful operation of stopping or plugging teeth which are greatly decayed by caries, they may be preserved for many years; in most instances during the remainder of life: and not unfrequently, from ten to twenty teeth may be preserved by this operation in the same individual." (*Koecker*).

(39) *And pointing to the portal of the tomb.*

"We have a most humiliating reflection, in observing the powers of renovation which are enjoyed by the inhabitants of shells, some of which, after their testaceous coverings have been broken, whether on the edges, in holes, or in cracks about the middle, no matter where—possess the power of directing, from their secretory vessels, a sufficient quantity of calcareous matter and animal gluten to repair the injury effectually;—whereas man has not the power of directing a single particle, either of earthy or glutinous matter, from his secretory system, to repair a small deficiency of enamel, which is literally a modification of porcelain shell, and the loss of which

makes every accession of cold actually distressing." (*Hare on the Stomach, p. 277.*)

(40) *A shining panoply of orient pearls.*

The chief object of attention in artificial teeth is, that the substance be durable, and not liable to change color. Human teeth and those of small animals have been heretofore supposed to answer the best purpose, while teeth cut from those of the sea horse have ranked next in importance; but lately, they have been formed with great success from certain materials known to the manufacturers, and have been variously denominated, according to the taste of the artist—silicious pearl teeth—mineral teeth—porcelain teeth—incorruptible, and terro-metallic. Under these titles, teeth of various degrees of excellence are now made, both in Europe and this country, and from their great beauty, cleanliness, durability, and unchangeableness in regard to color, will no doubt be generally adopted. They certainly possess some advantages over any other substitute for original teeth.

Of the various methods which have been devised for fixing artificial teeth, the most successful is, that of fastening a new tooth by means of a pivot to a sound fang. When thus fastened, the tooth may be worn for a considerable time without producing any inconvenience. The next method is, to adapt a tooth to the aperture from which another has been extracted, and to fasten it to the adjoining teeth. A third method is, to supply the place of teeth by means of a gold plate, to which the substitutes are firmly affixed, the plate being fitted to the gums, and supported by means of springs. A fourth mode of supplying teeth, by which whole sets may be provided and worn with great convenience, is to prepare gold or ivory frames, fitted closely to the gums, on which the teeth are firmly arranged, and, by means of springs, made to perform all the most essential functions of original teeth.

(41) *Like Him who fills unnumbered worlds with joy.*

"He who pursues his own advantage only, so far as he can do so without injuring another, is just; he who gives up his superfluity rather than do harm to another, is noble; he who works only for the common welfare, is the most noble, and no one but him deserves that name." (*Spurzheim.*)

(42) *Disturb the system when themselves destroyed.*

"I have been made happy by discovering that I have only added to the observations of other physicians in pointing out a connexion

between the extraction of decayed and diseased teeth, and the cure of general diseases. Several instances of the efficacy of that remedy in relieving head-ache and vertigo are mentioned by Dr. Darwin. Dr. Gatu relates that M. Petit, a celebrated French surgeon, had often cured intermittent fevers, which had resisted the bark for months, and even years, by this prescription; and he quotes from his work two cases, one of consumption, and one of vertigo, both of long continuance, which were suddenly cured by the extraction of two decayed teeth in the former, and two supernumerary teeth in the latter case.

"These facts should not surprise us, when we recollect how often the most general diseases are brought on by very inconsiderable inlets of morbid excitement into the system. A small tumor, concealed in the fleshy part of the leg, has been known to bring on epilepsy. A trifling wound with a splinter or a nail, even after it has healed, has often induced a fatal tetanus. Worms in the bowels have produced internal dropsy of the brain, and a stone in the kidney has excited the most violent commotions in every part of the system.—Many hundred facts of a similar nature are to be met in the records of medicine.

"When we consider how often the teeth, when decayed, are exposed to irritation from hot and cold drinks and aliments, from pressure by mortification, and from the cold air, and how intimate the connection of the mouth is with the whole system, I am disposed to believe they are often unsuspected causes of general, and particularly of nervous diseases. When we add to the list of those diseases the morbid effects of the acrid and putrid matters which are sometimes discharged from carious teeth, or from ulcers in the gums created by them, also the influences which both have in preventing perfect mastication, and the connection of the animal function with good health, I cannot help thinking, that our success in the treatment of all chronic diseases would be very much promoted by directing our inquiries into the state of the teeth of sick people, and by advising their extraction in every case in which they are decayed. It is not necessary that they should be attended with pain in order to produce diseases, for splinters, tumors, and other irritants before mentioned, often bring on diseases and death when they give no pain, nor are suspected as causes of them. This transition of sensation and motion to parts remote from the place where impressions are made, appears in many instances, and seems to depend upon an original law of the animal economy." (*Medical Inquiries by Dr. Rush*, Vol. I. p. 199.)

(43) *And spreads disease with every pulse that beats.*

That the general health of the body is affected by the state of the stomach and lungs, is a proposition which few, if any, will deny.—

And that the condition of either depends on the nature of whatever is introduced into it, will likewise be readily admitted. The effects which the state of the teeth may have upon the lungs, may therefore be considered in the first place. The chemical process which is carried on in the mouth, by means of its moisture and heat, will always, in a greater or less degree, cause the putrefaction of whatever extraneous matter is permitted to lodge upon or between the teeth. The air, even in the most open situation, is affected by passing over any putrescent substance. Now as the mouth is the chief passage by which the air enters the lungs, and as the air is affected by whatever it passes over or through, the lungs can never receive it in a pure state, except the mouth, through which it is introduced, be perfectly clean and healthy. But while any extraneous matter is permitted to accumulate and remain on the teeth, the mouth will naturally become unclean and unhealthy, imparting an infectious taint to the air which is inhaled.

"Fetid breath is occasioned by the state of the mouth, and seldom results from the condition of the stomach or digestive organs, as erroneously supposed. The escape of vapor from a disordered stomach can produce only a temporary effect, but from uncleanliness of the mouth, we find the taint constant and habitual; and unless the cause be eradicated, all the spices and perfumes of the east, though they may for a moment conceal, cannot remove it. Cleanliness of the mouth, therefore, is of great importance to the general health; in fact, the danger of the lungs from a constantly putrid effluvium has been strongly commented upon by the faculty of medicine, as a leading cause of pulmonary consumption." (*L. S. Parmly's Lectures.*)

"We respire," says Dr. Fitch, "about twenty thousand times in twenty-four hours, and yet, for months and years, this vast quantity of air is rendered poisonous by one or more diseased teeth. How little does it avail an individual, if by every possible means the purity of the air is preserved; if no impurities are suffered to remain in the streets; if his tenements are kept clean, his apartments ventilated; if he make distant journeys at a great expense of time and money, for the benefit of pure air, and, at the same time, carry the *cloaca* of filth in his own mouth? If this state of the breath, caused by bad teeth, so affects the olfactory nerves of a person near an individual having bad teeth, what must be its effect upon the delicate and sensible tissues of the lungs of the person himself? Nature has formed the lungs most delicate and sensible, and susceptible to the slightest injurious impressions:—She has also finely tempered the atmosphere for its safe and healthy reception in these delicate organs; but an accident, or a disease, may render it impure, unfit for respiration, and cause it, instead of harmonizing with the lungs in the most perfect manner, to exercise a baneful influence, armed with pestilence, and scattering the seeds of disease over the lungs, thus pouring the streams of deadly poison through every vein in the system. The

matter thrown off from the teeth in a state of disease and putrefaction, and also some states of diseased gums, is very acrid in its nature, as is demonstrated by its vitiating the saliva so much as to dissolve and oxydate metals, even silver, and to tarnish gold. We know that many of our organs have the power of resisting, for a length of time, in a wonderful manner, the effects of injurious impressions; but with the lungs I am disposed to believe that even slightly injurious impressions, if continued, will, sooner or later, prove to them a cause of disease and disorganization." (*Fitch on the Teeth*, pp. 300, 301.)

(44) *Each dental malady a thousand ways.*

"These sympathetic pains arising from carious teeth, proceed from the intimate connection that subsists between the branches of the fifth and those of the seventh pair of nerves. The pain in the ear is therefore sympathetic, arising from disease in the dens sapientiæ. From the connexion which subsists between these two pairs of nerves, it happens that not only inflammation in the teeth causes a sympathetic pain in the ears, but disagreeable and unharmonious sounds produce a sympathetic effect upon the teeth, and occasion that unpleasant sensation called the teeth being set on edge." (*Fox on the Teeth*, Part II. p. 31.)

"The sympathetic affections to which the tooth-ache gives rise, are exceedingly various and important; though it is only of late years they have been properly understood, and the attention of medical men directed to their true source. It not unfrequently happens, that parts the most remote become the apparent seat of pain, from the exposure of the nerve of a tooth. I have seen this occur, not only in the face, over the scalp, in the ear, or underneath the lower jaw, but down the neck, over the shoulder, and along the whole length of the arm." (*Bell on the Teeth*, p. 155.)

(45) *And oft the maniac sufferer expires.*

"A person complained," says Dr. Fuller, "of seemingly violent spasms in the head, which instantly deprived her of sense and motion, and she fell down lifeless for some time. She had been subject to these fits, I think, for two or three years, but of late they had become very frequent; no pain succeeded them, nor were they preceded by any symptoms, except by a trifling pain which darted into one of the third grinders that was decayed:—nor did she know what tooth-ache was. Having seen the most astonishing effects of caries in these teeth, I recommended the tooth to be extracted, and on removing it, she expressed herself by saying, that it seemed to pull up the root of the complaint.

"I have twice extracted teeth when the most severe pain was in the elbow; in both instances, it was one of the large molares of the under jaw; and in both, the pain of the elbow vanished on removing the teeth." (*Fuller on the Teeth*, p. 71.)

(46) *That feels the living impulse of the heart.*

It may be necessary to explain briefly the passage of the food through the alimentary canal, and the manner in which the chyle is converted into blood.

The food is received into the mouth, masticated between the teeth, imbued with saliva, and forced through the constrictors of the pharynx down the œsophagus into the stomach. It is then mixed with the gastric juice, which is secreted from the inner surface of the stomach; and this is found to be the immediate agent for effecting the change that the food undergoes. A knowledge of no part of physiology is more useful, than of the digestive organs.

"The peculiar properties of gastric juice render it one of the most powerful productions of the animal body. It is not a simple dilutent, but a solvent; and has the power of breaking down the food, and converting it into a soft, homogeneous paste, known by the name of chyme. So powerful is its faculty of solution, that the hard bones which dogs devour cannot resist its action. It not only unites with and dissolves the food, but changes its nature and composition. It is found to be of an antiseptic property, and corrects putrescency instead of inducing it. After the food has been properly acted upon by the gastric juice, it passes through a muscular contraction of the stomach, called the pylorus, into the duodenum. Here the food undergoes other changes, equally as important as those already produced on it in the stomach:—it mixes with the bile brought by the ducts from the liver, and with the pancreatic fluid from the pancreas. Having remained some time exposed to the action of these fluids, it is separated into two parts, an excrementitious, and a nutritious."—(*Richerand's Physiology, p.* 119.)

"After the food has remained a certain time within the duodenum, and this separation taken place, it proceeds along the other smaller intestines, the jejunum and ilium. By means of the peristaltic contractions of these intestines, the nutritious part of the food is said to be pressed out, and this is taken up by the inhalent mouths of the lacteals. The alimentary mass parts gradually with its nutritive particles, and passes from the small into the large intestines, the cœcum, the colon, and rectum.

"The nutritious part of the food taken up by the lacteals, is conveyed by different branches into the thoracic duct, and thence into the left subclavian vein, where it mixes with the blood brought back from the upper extremities. The subclavian vein terminates in the

vena cava, and this in the right auricle of the heart." The reason for the chyle entering the blood in the subclavian vein is explained as follows, by Dr. Paley:—"The chyle enters the blood in an odd place, but perhaps the most commodious place possible, viz., at a large vein in the neck, so situated with respect to the circulation, as speedily to bring the mixture to the heart. And this seems to be of great moment; for had the chyle entered the blood at an artery, or at a distant vein, the fluid composed of the old and new materials must have performed a considerable part of the circulation, before it received that churning in the lungs which is probably necessary for the intimate and perfect union of the old blood with the recent chyle." (*Paley's Natural Theology.*)

"It is now necessary that this new venous blood, which is of a dark color, should undergo changes indispensable to life. The right auricle contracting, the blood is propelled into the right ventricle, and from the ventricle it is farther forced through the pulmonary artery into the lungs. While circulating through them, it is exposed in the air cells to the atmospheric air taken in during respiration:—a change takes place; the blood becomes of a florid red color, subservient to the principles of life, and is returned by the pulmonary veins into the left auricle of the heart; and passing from them into the left ventricle, this ventricle contracts and propels the blood, by means of the aorta, to all parts of the body.

"Different opinions are entertained of the change which the blood undergoes in the lungs. Some physiologists imagine that it receives oxygen from the air: others that it gives off its superabundant carbon, and that the air is expired as carbonic acid gas. It is here sufficient to state, that the change is necessary to life, and that the blood sent to the lungs is of a dark color, while that which returns from them is a florid red, subservient to the functions of the animal economy." (*Waite's Manual*, 1826, p. 70.)

(47) *May rise terrific from that single source!*

"Mechanical trituration is not the only change that the food undergoes in the mouth. Subjected to the action of the organs of mastication, which overcome the force of cohesion of its molecules, it is at the same period imbued with saliva. This fluid, secreted by glands placed in the vicinity of the mouth, is poured in considerable quantity into that cavity during mastication.

"The saliva is a transparent and viscous fluid, formed of about four parts of water and one of albumen, in which are dissolved phosphate of lime, of soda, and of ammonia, as well as a quantity of muriate of soda. Like all other albuminous fluids, it froths when agitated, by absorbing oxygen, for which it appears to have a strong affinity. Its affinity for oxygen is such, that we may oxydize gold and

silver by triturating in saliva, thin leaves of these metals, which are of such difficult oxydizement. The irritation occasioned by the presence or desire of food, and by mastication, excites the salivary glands, which swell and become so many centres of fluxion, towards which the humours flow abundantly.

"It is estimated that about six ounces of saliva are secreted during the average time of a meal. It flows in greater quantity when the food is acrid and stimulating. It mixes with the mucus copiously secreted from the glands, and with the serous fluids exhaled by the exhalent arteries of the mouth. There can be no doubt that the saliva, mixing with the food by the motion of the jaws, absorbs oxygen, and unites to the alimentary substances a quantity of that gas fit to bring about the changes they are ultimately destined to undergo." (*Richerand's Physiology*, p. 96.)

(48) *Nor asks a staff to guide him to the grave.*

The following judicious observations, made nearly two centuries ago, will serve to convince the reader that the opinions sustained in this volume are neither new nor singular.

"The terrible pains and diseases of the teeth do chiefly proceed from two causes. The first is from certain filthy phlegmy matter which the stomach and vessels do continually breathe and send forth, which does lodge or centre in the mouth, especially between the teeth, and on the gums; and some people having fouler stomachs than others, such do breathe forth very sour, stinking, phlegmy matter, which does not only increase the pain, but causeth the teeth to become loose and rotten. And for want of continual cleansing and washing, those breathings and this phlegmy matter turns to putrefaction, which does eat away the gums, as though worms had eaten them. And this defect is generally attributed to the disease called the *scurvy;* but it is a mistake: the cause is chiefly, as is mentioned before, from the stomach, or for want of cleansing.

"This distemper of the teeth and gums does also proceed from the various sorts of meats and drinks, and more especially from the continual eating of flesh, and fat sweet things, compounded of various things of disagreeing natures, that do not only obstruct the stomach but fur and foul the mouth, part thereof remaining upon the gums, and between the teeth. For all such things do quickly turn to putrefaction, which does by degrees corrupt both the teeth and gums. Besides, our beds take up near half the time of our lives, which time the body is not only without motion, but the bed and coverings do keep it much hotter than the day-garments, especially of those that draw the curtains of their windows and beds so close, that the pure spirits and thin refreshing vapors of the air are hindered of having their free egress and regress, which does dull and flatten the action of

the stomach; and this is the chief cause why suppers lie hard in the stomach, and require more than double the time for perfect concoction, that the same food does when a man is up and in open air: for this element, if it hath its free influence, is sucked in, as by sponges, through all the pores of the body, and does wonderfully refresh, comfort, open and cleanse all the parts, having power to assist and help concoction: but hot, dull, thick airs, do destroy the action of the stomach, and as it were suffocate the pure spirits, drying up and consuming the radical moisture. Therefore the night does foul the mouth more than the day, furring it with a gross slimy matter, especially those that have foul stomachs, and are in years, which ought to be well cleansed every morning.

"Whatsoever are the disorders in the body, the mouth does always partake of them; besides the evils that the variety of food, and the improper mixtures of flesh and fish, and many other things, which do foul and hurt both the teeth and gums. When any person is disordered with inward diseases, does not the mouth quickly complain of the evils thereof? This very few consider in time.

"It is to be noted, that most people do attribute the diseases of the teeth to colds, and rheums, and other outward accidents. It is true, outward accidents will further this disease, but then there must be matter beforehand, otherwise outward colds can have no power to cause this pain. The same is to be understood in all stoppages of the breast, and other obstructions, as coughs, and the like. For, if any part be obstructed, or there be matter for distemper, then, on every small occasion of outward colds, or like accidents, nature complains. If your teeth and gums be sound, and free from this matter, take what colds you will, and your teeth will never complain, as daily experience doth show. For all outward colds, and other accidents of the like nature, have no power to seize any part of the body, except first there be some inward defect or infirmity: suppose the teeth be defective, then the disease falls on that part; or if it be the head, eyes, breast, back, or any other part or member of the body that is obstructed, the evil is felt in that part. Therefore if the mouth be kept clean by continual washings, it will prevent all matter which may cause putrefaction: and then colds, and the like accidents, will have no power to seize this part, or cause this terrible pain. Even so it is in all other parts of the body. If temperance and sobriety be observed in meats, drinks, and exercises, with other circumstances belonging to health, then stoppages, coughs, colds, and other obstructions, would not be so frequent on every small occasion; for temperance has an inward power and operation, and does as it were cut off diseases in the very bud, preventing the generation of matter whence distempers do proceed, increasing the radical moisture, and making the spirits lively, brisk, and powerful, able to withstand all outward colds, and other casualties of the like nature.

"There are many various things, of divers natures, prescribed by

physicians and others, as washes to preserve the teeth and gums; but most of them, if not all, to little or no purpose, as daily experience teaches: for all high, sharp salts, and things of a sour or keen nature, do rather cause the teeth to perish, than the contrary; as do all hot spirits, be they what they will: many have destroyed their teeth by the frequent use of such things, and it hath hardly ever been known that such things have ever cured or prevented the aching pains of the teeth, but water only. Many examples I could mention, if it were convenient. Physicians and others do daily prescribe such things for the cure and prevention of this disease of the teeth, which most of them do know by experience can do no good, but rather the contrary: but when people come to them, they must give them something for their money; for interest and ignorance have more affinity with this sort of people than virtue, and the true knowledge of the nature of things. Most certain it is, that the shepherd and husbandman do know far better how to prepare the meat for their cattle, and also how to preserve them from disorders, than many physicians do their food or physic: and a man shall understand more by conversing with this sort of people, than with the learned: for the shepherd and husbandman understand something of nature; but most of the learned are departed from the simple ways of God in nature, putting out their own eyes, and then boasting what wonders they can see with other men's: they have invented many words to hide the truth from the unlearned, that they may get the greater esteem. This hath chiefly been done to advance pride and interest; so that the divine eye is departed from many of them, who never make any inspection into the true nature of things, being contented to take other men's words, let it be right or wrong, as long as they have authority and law on their sides, wherefore should they trouble their weak heads?

"The best and most sure way to prevent the diseases and pains in the teeth and gums, is every morning to wash your mouth with at the least ten or twelve mouthfuls of pure water, cold from the spring or river, and so again after dinner and supper, swallowing down a mouthful of water after each washing; for there is no sort of liquor in the world so pure and clean as water; and nothing doth cleanse and free the teeth and gums from that foul matter which does proceed from the breathings and purgings of the stomach, and from the various sorts of food, so well as water; the use of other washes is to little or no purpose; but whosoever do constantly wash their mouths with water, as is before mentioned, shall find an essential remedy.—All hard rubbing and picking of the teeth ought by any means to be avoided, for that is injurious to them. Also whensoever you find your mouth foul, or subject to be slimy, as sometimes it will more than at others, according to the good or evil state of the stomach, though it be not after eating; at all such times you ought to wash your mouth. This rule all mothers and nurses ought to observe, washing

the mouths of their children two or three times a day; and also to cause their children to swallow down a little water, which will be very refreshing to their stomachs. For milk does naturally foul and fur the mouth and teeth, and if they be not kept clean by continual washing, it causes the breeding of children's teeth to be the more painful to them.

"Few there be that understand or consider the excellent virtues of water, it being an element of a mild and cleansing nature and operation, friendly unto all things, and of universal use: but because it is so common, and so easily procured, I am afraid that many people will be like *Naaman* the *Syrian*, when the prophet *Elisha* advised him to *wash seven times in the river of Jordan to cure his leprosy;* it being the ignorance and folly of most people, to admire those things they do not know, and, on the other side, to despise and trample under foot those things and mysteries they do know; which the learned in all ages have taken notice of: for, should some people know what apothecaries and others give them, they would despise the physic, and have but little respect for their doctor.

"All housewives do know, that no sort of liquor, be it what it will, will cleanse and sweeten their vessels, but only water; all other liquors leaving a sour stinking quality behind them, which will quickly cause putrefaction: but water in its own nature is clean and pure, not only for all uses in housewifery, and the preservation of health; but the saints and holy men of God have highly esteemed this element, by using it in the exterior acts of divine worship, as having a simile with the Eternal water of life, that does purify and cleanse the soul from sin. (*Tryon's Way to Health*, pp. 17—21.)

(49) *Reveals the glories of her kindred sky.*

"If the great distinctive attribute of man be the faculty of speech, that speech can never be complete or perfect, without two arches of teeth to modulate the sound, and give proper utterance to the words. Indeed it is obvious to every one, that when the teeth are lost, the speech becomes imperfect, and often scarcely intelligible.

"This circumstance makes them valuable beyond measure to a public speaker, and their preservation ought to meet due attention from those who wish to shine, either in the senate, at the bar, or in the pulpit.

"Without these instruments of utterance, the graces of eloquence are lost, and the power of impressing the mind and convincing the understanding, if not destroyed, is considerably diminished." (*L. S. Parmly's Lectures*, p. 42.)

"Health is so necessary to all the duties, as well as pleasures of life, that the crime of squandering it is equal to the folly; and he that for a short gratification brings weakness and diseases upon himself,

and for the pleasure of a few years, condemns the maturer and more experienced part of his life to the chamber and the couch, may be justly reproached, not only as a spendthrift of his own happiness, but as a robber of the public,—as a wretch that has voluntarily disqualified himself for the business of his station, and refused that part which Providence assigns him in the general task of human nature." (*Dr. Johnson.*)

"Health, I conceive, is often maintained at the expense of that vital power, which, in a more natural state, would have carried us to age." (*Thackrah.*)

"The old man who has preserved his teeth in good condition, is much less frail than he who has lost them early by inattention. The youth who is well endowed by nature in this particular, promises to lead a life more vigorous, than he whose teeth have prematurely decayed." (*Gerbaux*, p. 20.)

On the subject of a happy old age, produced by sobriety, we find the following account in the writings of Addison. (*Spectator*, Vol. III. No. 195.)

"The most remarkable instance of the efficacy of temperance, towards the procuring long life, is what we meet with in a little book published by Lewis Cornaro the Venetian; which I the rather mention, because it is of undoubted credit, as the late Venetian ambassador who was of the same family, attested more than once in conversation, when he was in England. Cornaro, who was the author of the little treatise I am mentioning, was of an infirm constitution till about forty, when, by obstinately persisting in an exact course of temperance, he recovered a perfect state of health; insomuch that at four score he published a book which has been translated into English under the title of "Sure and Certain Methods of obtaining a Long and Healthy Life." He lived to give a third and fourth edition of it; and after having passed his hundredth year, died without pain or agony, and like one who falls asleep. The treatise I mention has been taken notice of by several eminent authors, and is written with such a spirit of cheerfulness, religion, and good sense, as are the natural accompaniments of temperance and sobriety. The mixture of the old man in it, is rather a recommendation than a discredit to it."

The work alluded to by Mr. Addison has been recently republished in this city by Mr. Graham, lecturer on health and longevity, who has prefixed to the neat little volume the following remarks:—

"After an experiment of, at least, six thousand years, man knows about as little how to live, as he did in the infant period of the world. Indeed, there is no subject that demands the exercise of human intellect, which is more intricate and difficult to understand, than is the science of human life. And yet the popular opinion is, that every man can ascertain by his own *experience* what is best for him, and how he ought to live: and that no general rule can be laid down,

which will be equally suitable to all mankind, because there are differences of *constitution*, and *temperament*, and *predisposition*, &c. 'Some,' it is said, 'with great regularity of habits, and temperance in diet, enjoy good health and live to great age, while others, pursuing the same course, are always sickly, and die young; and on the other hand, some, with great irregularity and intemperance, enjoy health and live to become very old. Therefore, what is best for one man may not be for another, and, consequently, it would be impossible to prescribe any mode of living which would be suitable to all constitutions and circumstances."

"This reasoning certainly has the aspect of plausibility, to such as take but a very hasty and superficial view of the subject. But surely, if we will honestly investigate this matter with a candid and truly inquiring mind, we shall see things very differently, and be led to very different conclusions. We shall then find the true statements to be these:—

"All men, with a good natural constitution, who are regular in their habits and temperate in their diet, and in other respects correct, as a general rule, enjoy health, and live to old age; but some men with a feeble constitution and diseased body, though regular and careful in their habits, and temperate, but not always judicious in their diet, are delicate and sickly all their lives and die early, or before they attain to old age; and would have suffered much more and died much sooner, had they been irregular and intemperate:—while on the other hand, some men, with a remarkably good and vigorous constitution, and many of whose habtis are conducive to health and longevity, enjoy a considerable degree of health and attain to great age, in spite of their irregularities and intemperance: nevertheless, most persons who are irregular and intemperate become diseased early, and die before they reach old age, or even the meridian of life." (*Introduction to Cornaro by Sylvester Graham, New York*, 1833, 178 pages 18mo.)

The following passages are taken from Cornaro's work.

"Oh holy and truly happy regularity! How holy and happy should men in fact, deem thee, since the opposite habit is the cause of such guilt and misery! so that men should know thee by thy voice alone, and thy lovely name; for, what a glorious name, what a noble thing, is an orderly and sober life."

"I will give an account of my recreations and the relish which I find at this stage of life, in order to convince the public that the state I have now attained is by no means death, but real life. They will see, not without the greatest astonishment, the good state of health and spirits I enjoy; how I mount my horse without any assistance or advantage of situation; and how I not only ascend a single flight of stairs, but climb up a hill from bottom to top, afoot, and with the greatest ease and unconcern; then how gay, pleasant, and good humored I am: how free from every perturbation of mind; and every

disagreeable thought; in lieu of which, joy and peace have so firmly their residence in my bosom, as never to depart from it. I contrive to spend every hour of life with the greatest delight and pleasure, having frequent opportunities of conversing with many honorable gentlemen; then I betake myself to reading some good book, and when I have read so much as I like, I write; endeavoring in this as in every thing else, to be of service to others to the utmost of my power.

"Besides this, I have my several gardens supplied with running water, and in which I always find something to do that amuses me.

"Nor are my recreations rendered less agreeable and entertaining by my not seeing well, and not hearing readily every thing that is said to me; or by any other of my faculties not being perfect, for they are all, thanx God, in the highest perfection, particularly my palate, which now relishes better the simple fare I eat, wherever I happen to be, than it formerly did the most delicate dishes, when I led an irregular life.

"And if it be lawful to compare little matters, and such as are esteemed trifling, to affairs of importance, I will farther venture to say, that such are the effects of this sober life, that at my present age of eighty-three, I have been able to write a very entertaining comedy, abounding with innocent mirth and pleasant jests.

"Such are some of the recreations of my old age."

To this latter passage Mr. Graham appends the following note:—

"Gentle reader! art thou still in early life, and dost thou sometimes contemplate old age as necessarily a state of feebleness, and decrepitude, and gloom? Or, art thou already what the young call old, and dost thou feel thyself entering into the dreary winter of thy bodily existence? Seest thou nothing but weakness, and infirmities, and the last waning of life's flickering light, in the prospect before thee? Seems thy unjoyous way downward into the vale of death covered with a mist whose density increases as thou descendest, wrapping thee in deeper and yet deeper gloom, and blearing thy vision, and taking away thy other senses by slow, but yet too painfully perceptible degrees; and shutting thee up to the solitary consciousness of exhausted power and approaching death? And with such prospect before thee, and in such a state, art thou incredulous when the venerable Cornaro tells of the comforts and the cheerfulness of his green old age? Does it seem to thee impossible that at the age of ninety or a hundred years, a man should have that health, and vigor, and vivacity, and cheerfulness, and increased enjoyment, of which Cornaro speaks?

"Doubt not, beloved reader! but be assured, if thou wilt live the life of the righteous, thou shalt reap this reward. Wrong not thy body nor thy soul! Obey the laws of life! Live as thou shouldst, in harmony with the universal and inflexible government of God, established constitutionally in the great system of nature's laws, and

thou shalt experience the health, the serenity, the peace, the cheerfulness, the happiness, and even the raptures of Cornaro! And when thy life is spent, and thou art called to make thy exit from this changing scene, thou shalt walk erect in patriarchal manliness, like Moses, to the mountain top, with vision unimpaired, and scarce diminished strength, and there, in the glorious prospect of a better world, thy God himself will spread thy death-bed for thee, and take thee to himself without a pain. !"

I cannot deny myself the pleasure of making one more extract from Cornaro, touching the influence of sobriety on the religious hopes of man.

"I must farther add," says this good old man, "though it may appear impossible to some, that, at this age, I enjoy at once two lives: one terrestrial, which I possess in fact; the other celestial, which I possess in thought: and this thought is equal to actual enjoyment, when founded upon things we are sure to attain, as I am sure to attain that celestial life, through the infinite goodness and mercy of God. Thus, I enjoy this terrestrial life, in consequence of my sobriety and temperance, virtues so agreeable to the Deity; and I enjoy by the grace of the same divine Majesty, the celestial, which He makes me anticipate in thought:—a thought so lively, as to fix me entirely on this object, the enjoyment of which I hold and affirm to be the utmost certainty. And I hold that dying in the manner I expect is not really death, but a passage of the soul from this earthly life to a celestial, immortal, and infinitely perfect existence. Neither can it be otherwise:—and this thought is so superlatively sublime, that it can no longer stoop to low and wordly objects, such as the death of this body, being entirely taken up with the happiness of living a celestial and divine life; whence it is that I enjoy two lives. Nor can the termination of so high a gratification as I enjoy in this life, give me any concern: it rather affords me infinite pleasure, as it will be only to make room for another glorious and immortal life."

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## CONCLUSION.

Having appended to the poem such notes as my leisure for several months past has enabled me to select, I feel it necessary to remark, that although on many of the subjects discussed, the notes are not so full nor so illustrative as I could have wished, yet they are the best that my limited opportunity would permit me to select. A very laborious profession, in connexion with other duties, has completely

engrossed that time which I would have gladly devoted to this object, and at some future day I hope to be enabled to do greater justice to a subject that demands the attentive consideration of every individual. The most useful advice with which I can conclude these remarks is, to urge on every individual the necessity of aiming at the prevention of disease altogether, which can in a great measure be effected without engrossing more time than its importance merits.

This is a subject which demands the attention of parents, and those who are entrusted with the care of children. It should be the first object of every person so situated, to habituate children to clean their teeth, at least twice a day, and when this practice has been once adopted, it will be continued as a matter of course. Besides this, from the age of six to twelve years in particular, a dentist should be consulted three or four times a year, and at a later period, once or twice for the purpose of examining the teeth, and counteracting, by the timely removal of such causes as may produce disease, any mischief which is likely to take place.

In London and Paris, and I believe in all the larger cities of Europe, the principal academies and boarding schools are regularly attended by dentists, for the purpose of having the children's teeth examined, and of performing such operations as they may require when necessary. I should be glad to see this plan more universally adopted in our large cities, for I am convinced the advantages arising from it are incalculable; for if proper care and attention be not paid during the time teeth are shedding, a countenance, however naturally beautiful, may, in consequence, be totally disfigured; and it frequently happens, that an unpleasing countenance, although united to an amiable mind, produces a dislike that is not easily overcome.—"It is, therefore, (says Mr. Murphy), a duty incumbent on parents, and those who have the care and education of youth, while they do justice to their minds, not to overlook their personal advantages."

"No face, however pleasing and prepossessing, can ever be complete in its attraction, where the mouth is disfigured. However worthy of admiration by natural symmetry, a still and silent countenance may be, we at once lose the grateful impression when a disclosure of bad teeth is made by the influence of any excitement.—The circumstance either attaches disgrace to the individual, for present want of cleanliness, or to its parents or nurse, for past neglect. Even the laugh, the test of good humor and openness, which invites to cordiality and confidence, fails to produce a reciprocal effect when we are disgusted by a foul mouth." (*L. S. Parmly's Lectures*, p. 44.)

I have thus adduced several arguments, in order to impress upon the minds of my readers the importance of my subject, as far as it relates to an early and attentive care in the management of the teeth. No fact that I have brought forward can be considered in the slightest degree exaggerated, for it will be supported by the feelings of every individual that reflects upon it. If, from what has been said,

the subject shall meet due weight, I shall have performed a duty highly pleasing to myself, from a consciousness of having pointed out the right way, which, if practised, will not only add to happiness and comfort, by a freedom from pain and other inconveniences, but also to the improvement of personal appearance at every age of life.

The commencement of disease is too generally looked upon as a matter of little importance; and thus, but few persons take any notice of its progress, until the agonizing pain of tooth-ache forces it upon their consideration; and when the disease has been permitted to extend itself so far, it seldom happens that it can be effectually remedied by any other means than extraction; but as it is not always in the power of every individual to have recourse to a dentist on the first attack of tooth-ache, the patient may possibly obtain a temporary relief by applying to the diseased tooth a strong solution of camphor in spirits of wine, which if it prove not altogether successful, has at least the advantage of safety, and this is much more than can be said of most of the celebrated remedies. Every extreme of heat and cold should be avoided, as both are equally liable to cause pain in the teeth. Attention to cleanliness of the teeth in early life cannot sufficiently be insisted on, since it is evident that most of their diseases arise from extraneous matter being suffered to remain upon them; and no time, therefore, should be lost, in removing whatever has accumulated as soon as it is discovered.

The brush and powders, which are the common means had recourse to, will never more than half perform this office, as they act only on the outer parts, and thus leave the interstices entirely untouched. Some tinctures may for a time give a whiteness to the enamel, but they are certain ultimately to injure its texture, and render it more liable to decay. In short, it may be concluded, that in proportion as any dentifrice, paste, or lotion, whitens the enamel, its structure is injured or destroyed. The only means necessary to preserve its color is to remove whatever may collect around the teeth, and thus allow them to possess their natural whiteness and polish.—The best method to effect this is with a brush and water; should this prove insufficient, powders composed of Armenian bole, prepared chalk, Peruvian bark, or charcoal, may be used with very great advantage. But, even when the teeth have been thus cleaned, the insterstices are not cleared. This may be effected by passing between the teeth a thread of waxed silk, thereby to dislodge whatever may have collected on their sides.

The means which have been pointed out for the prevention of disease will be found of much greater advantage to society at large than all that has been said respecting the treatment. And I cannot too strongly urge the importance of this particular object.

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Parmly W. Samuel, New York, 1
Patello Wm. H.,Charlottee C. H. Va. 1
Park David N., A. M. New York, 1
Parkhurst Wm. H., New York, 1
Peak J. M. Cooperstown, N. Y. 1
Plant Ebenezer, Willimantic, Conn. 1
Pritchard P. C. Jackson, N. C. 1
Plough A. L., New Orleans, 1
Parsons J. H., Liverpool, England, 1
Palmer W. A., Stratford, Conn. 1
Pleasants Charles, Painesville, O. 1
Perkins Jacob, Springfield, *Mass*, 1
Parker T H, Philadelphia, 1
Pent George, *M* D, Lawrenceville, Virginia, 1
Pancost S, Shelbyville, Kentucky, 1
Royce W. A. Poughkeepsie, N. Y. 3
Robinson E. C. Norfolk, Va. 1
Roper Lewis, M. D. Philad. 20
Rowell Chas., N. Y. 2
Roe Early, M. D. Hillsborough, Ga. 1
Rodriguez B. A. M. D. Charles,S. C. 1
Ritter—Washington City, 1
Robinson E. M. D. Leesburg, Ky. 1
Reynolds Wm., M. D. Camden, S. C. 1
Reinstein Frederick, Philadelphia, 1
Ross Samuel, New-York, 1
Root J B, Hamilton, *Madison* Co, New-York, 1
Reese F. A.M.D.Hamilton Bermuda. 1
Strickland Benj. Cleveland, O. 1
Snow R. J., Buffalo, 1
Smith & Thackston, Farmville, Va. 1
Scott W. R., Raleigh, N. C. 4
Shuff P. L., M. D., Leesburg, Ky. 1
Sneeds M. D., Frankford Ky. 1

Stringfellow S. L. Baltimore, 20
Stratton Cha's, Keene, N. H. 1
Sanders M., London, 1
Sanborn E., Andover, Mass. 1
Smith Wm., Liverpool, Eng. 1
Stinkley B. D. Albany, 1
Smith G. W., N. Orleans, 1
Stuart R., Knoxville, E. T. 1
Smith J. W. Amherst, Mass. 1
Searle F., Springfield, Mass. 1
Stockton S. W. Philadelphia, 20
Stowell John, Philadelphia, 1
Shepherd S *M*, Petersburg, Va, 1
Sherman A, Newark, New-Jersey, 2
Simpson ——, *M*anchester, England, 1
Sale T A, Williamsboro, N C, 1
Sims J *M*, M D, Fish Dam, Union *D*is, S Carolina, 1
Sanders E, 16 Argyle st, London, 1
Stevens B H, Elbridge, Onondagua Co, New-York, 1
Taylor, Edward, M. D. Bainbridge, O. 2
Tucker, E. G., M. D., New-York, 2
Trenor John, M. D., New York. 1
Trenor *J*ames, *M. D., N. Y.* 1
*T*ilyard *H. W. B*altimore 1
*T*alieferro *T. S., M. D. M*ays. *K*y. 1
*T*hompson — *D*octor, *C*olum. *O.* 1
*T*horn, *D*octor, *B*rooklyn 1
*T*yler *N*athaniel, *M*ass. *C*hicapee *F*alls, 1
*T*aylor *J*ames, Crawfordville, *I*a. 1
*T*eter *G. T., D*entist, *G*reenfield, *H*ighland *C*o. *O*hio. 1
Thorn Doctor, Edgefield C H, S C, 1
Thackston Doctor, Farmville, Va, 1
Townsend Sam'l, Baltimore, 1
Truman, George, Philadelphia, 1
*V*an *P*raag *A. S., N*ew *Y*ork, 1
*V*incent *E*zra, *N*ew *Y*ork, 1
*V*an Camp, *L*ouisville, *K*y. 1
*V*an *P*aten *C. H., P*ittsburg, 1
*V*anboskirk *L. E. S*t *J*ohn, *N. B.* 1
*W*illard *M. T.* Concord, *N. H.* 1
*W*eed *J. S*acket, *W*.Greenfield, *N. Y* 1
*W*hite *G*eo. *H., N*ew *Y*ork, 1
*W*alker & *J*ones, *N*ew *Y*ork, 20
*W*anzer *N. C., A*uburn, New *Y*ork, 1
*W*ayt *J*ohn *G. R*ichmond, *V*a, 2
*W*ilson *J. D., R*ichmond, *V*a. 2
*W*are *W, M. D., W*ilmington, *N. C.* 1
*W*heat *J. B., N*ew *H*aven, 1
White, S D, Philadelphia, 1
Worthington R C, M D. Murrfreesboro, N C, 1
Ward David G, Wanesboro, N C, 1
Ward W A, Petersburg, Va, 2
Willmore E, Baltimore, 1
Wheeler E D, Hillsboro, Coffee Co, Tennessee, 1
Williams E C, M D, *P*hiladelphia, 1
Wells H, Hartford, Conn, 1
*Y*oung *H., T*roy, *N*ew *Y*ork, 1
Yard George, *P*hiladelphia, 1